Texas A&M University
College of Veterinary Medicine and
Biomedical Sciences

Academic Program Review
February 14-16, 2011
Information Packet

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1. INTRODUCTION

1.1 Welcome from the Associate Dean for Undergraduate Programs

The faculty, staff, and students of the Biomedical Sciences (BIMS) Bachelor of Sciences degree program in the College of Veterinary Medicine & Biomedical Sciences (CVM) welcome you to Texas A&M University (TAMU). We are grateful to you for agreeing to serve as external reviewers of our academic program. This review of the BIMS program will be its first as a distinct program, as in the past it was indirectly evaluated during individual departmental reviews of the three major participating departments and not as a whole. These three departments are Veterinary Integrative Biosciences (VIBS), Veterinary Pathobiology (VTPB), and Veterinary Physiology and Pharmacology (VTPP). The BIMS program was also peripherally reviewed as part of the 2001 accreditation review of the college by the American Veterinary Medical Association.

This year's review offers us a valuable opportunity to receive external critiques that will help us advance our mission to prepare students well for biomedical science careers and responsible leadership in a global society. The BIMS program is nearly unique as a large interdepartmental baccalaureate degree-granting entity within a college of veterinary medicine. This uniqueness presents both challenges and opportunities, and we hope to learn how to better meet the challenges and build upon the opportunities as a result of your review.

I recognize that this review takes a significant amount of time and effort on your part and sincerely thank you for accepting the university’s invitation to conduct it. Please feel free to contact me if you have any questions or need information that is not contained in this report.

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Associate Dean for Undergraduate Education
College of Veterinary Medicine and Biomedical Sciences
Texas A&M University
College Station TX 77843-4458
Phone (979)845-2828
FAX (979)847-8981
ecastiglioni@cvm.tamu.edu

1.2 CHARGE TO THE REVIEW TEAM

Letter dated January 4, 2001, from to Dr. Karen Butler-Purry, Associate Vice Present for Graduate Studies, Texas A&M University, to the Review Team:

This letter provides you with a brief background on the undergraduate Program in Biomedical Science at Texas A&M University, and explains the expectations for our upcoming programmatic review. The program was created in 1972, and is centrally administered by the College of Veterinary Medicine and Biomedical Sciences. The program offers an undergraduate B.S. in Biomedical Sciences, and each year, the program awards approximately 375 such degrees.
This review is part of a periodic review of all Texas A&M University academic programs, and offers an opportunity to assess the standards of the program and to learn from review team member’s experiences with similar programs. This exercise marks the inaugural review for the Program in Biomedical Science.

I request that the review team examine the undergraduate program using the materials that will be provided, information you gain through personal interactions while visiting Texas A&M, and any additional information that you might request. While evaluating the program, please consider the allocation of resources within the program (both human and fiscal) and the absolute level of support the program receives from the university. Please comment as appropriate on current and potential leveraging of these resources, as well as current and potential interaction with other programs, departments and groups, both on campus and off.

Also, please address the issue of learning-based outcomes:

- Does the program have ongoing and integrated planning and evaluation processes that assess its programs and services, that result in continuing improvement, and that demonstrate that the program is effectively accomplishing its mission?
- Has the program identified expected outcomes for its educational programs?
- Does the program have evidence of improvement based upon analysis of results?

In addition, I ask that you address the impact of the Faculty Reinvestment Program, started by Texas A&M University in 2003. The reinvestment program has resulted in the hiring of almost 500 new faculty members dispersed throughout the University. The goal is to improve the quality of education for Texas A&M students by having more faculty available for mentoring and advising, whether more course or sections are available, or by simply being more responsive to student needs. Through this review we plan to track and measure real increases and improvements in the quality of the graduate and undergraduate experiences across all dimensions. Overall, the College of Veterinary Medicine and Biomedical Sciences gained 37 positions under the reinvestment plan and many of those have impacted the Program in Biomedical Science. We ask that you assess the success of the program in moving their teaching and research agendas forward with these hires based on information provided to you in the forthcoming self-study.

1.3. ITINERARY – please see next pages
### ITINERARY

**Texas A&M University**  
Biomedical Sciences Program  
College of Veterinary Medicine and Biomedical Sciences  
Academic Program Review Itinerary  
February 13-16, 2011

Hosted by:  
Dr. Evelyn Tiffany-Castiglioni  
Professor and Head  
Veterinary Integrative Biosciences  
Office Phone: 979-845-3268  
Cell Phone: 979-676-0619

Dr. Skip Landis  
Assistant Dean  
Biomedical Sciences  
Office Phone: 979-845-4941  
Cell Phone: 979-220-6707

Accommodations: **Rudder-Jessup B&B**  
115 Lee Avenue, College Station, TX 77840  
Phone: 979-693-1749  
http://www.rudderbandb.com/index.html

<table>
<thead>
<tr>
<th>SUNDAY, 02/13/2011</th>
<th>Arrival</th>
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| 02/13 2:00 pm - 5:00 pm | **Check-in at Rudder-Jessup B&B:**  
Dr. Skip Landis to escort to Rudder-Jessup B&B and provide reviewers with hang tag for parking |

| 02/13 6:15 pm - 8:00 pm | **Dinner with:**  
Dr. Evelyn Tiffany-Castiglioni (Associate Dean Undergraduate Studies), Dr. Skip Landis (Assistant Dean, Biomedical Sciences), Dr. Elizabeth Crouch (Director, Biomedical Sciences Program)  
Reservations under Dr. Evelyn Tiffany-Castiglioni |

| Luigi’s Patio Ristorante | 3975 Sh-6 S  
College Station, Texas 77845  
979-693-2742  
http://luigispatoriotorante.com/ |

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<thead>
<tr>
<th>MONDAY, 02/14/2011</th>
<th>Meetings</th>
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| 02/14 7:30 am - 8:30 am | **Administrator Breakfast Meeting with:**  
Dr. Karan Watson (Provost), Dr. Martyn Gunn (Vice Provost), Dr. Karen Butler-Purry (Dean of Graduate Studies), Dr. Pamela Matthews (Associate Provost for Undergraduate Studies).  
Provost provides charge to reviewers and provides institutional perspective. |

| Rudder-Jessup B&B |

| 02/14 9:00 am - 10:00 am | **Dean’s Office Meeting with:**  
Dr. Eleanor Green (Dean), Dr. Kenita Rogers (Associate Dean Professional Students), Dr. Bhanu Chowdhary (Associate Dean Graduate Studies), Dr. Evelyn Tiffany-Castiglioni (Associate Dean Undergraduate Studies) |

<p>| VIBS Conf. Rm. 107-D |</p>
<table>
<thead>
<tr>
<th>Date</th>
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<tr>
<td>02/14</td>
<td>10:15 am – 11:15 am</td>
<td><strong>BIMS Program Meeting with:</strong> Dr. Evelyn Tiffany-Castiglioni (Associate Dean Undergraduate Studies), Dr. Skip Landis (Assistant Dean, Biomedical Sciences), Dr. Elizabeth Crouch (Director, Biomedical Sciences Program)</td>
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<td><em>VIBS Conf. Rm. 107-D</em></td>
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<td>02/14</td>
<td>11:45 am – 1:00 pm</td>
<td><strong>Lunch Meeting with Department Heads:</strong> Dr. Evelyn Tiffany-Castiglioni (Veterinary Integrative Biosciences), Dr. Glen Laine (Veterinary Physiology and Pharmacology), Dr. Linda Logan (Veterinary Pathobiology), Dr. Allen Roussel (Veterinary large Animal Clinical Sciences), Dr. Sandee Hartsfield (Veterinary Small Animal Clinical Sciences)</td>
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<td><em>VIBS Conf. Rm. 107-D</em></td>
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<td>02/14</td>
<td>1:15 pm – 2:30 pm</td>
<td><strong>Meeting with BIMS Staff:</strong> Mrs. Judy Towell (Administrative Assistant), Mr. Brady Dennis (Senior Academic Advisor I), Dr. Henry Huebner (Senior Academic Advisor I), Ms. Lydia Carrascosa (Academic Advisor II), Mrs. Suzanne Rosser (Academic Advisor II)</td>
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<td>02/14</td>
<td>2:45 pm – 4:00 pm</td>
<td><strong>Work Session for the Review Team</strong></td>
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<td>02/14</td>
<td>4:00 pm – 5:00 pm</td>
<td><strong>Tour of Vet Medicine</strong></td>
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<td>02/14</td>
<td>5:30 pm – 7:00 pm</td>
<td><strong>Dinner</strong></td>
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<tr>
<td>TUESDAY, 02/15/2011</td>
<td>Meetings</td>
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<tr>
<td>02/15</td>
<td>7:30 am – 9:00 am</td>
<td><strong>Breakfast</strong></td>
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<td><em>Rudder-Jessup B&amp;B</em></td>
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<td>02/15</td>
<td>9:30 am – 11:00 am</td>
<td><strong>Breakout sessions with:</strong> Dr. Kenita Rogers (with Dr. James Wagner, UT Southwestern Medical School), Dr. Bhanu Chowdhary (with Lori Martensen, The Ohio State), Dr. Evelyn Tiffany-Castiglioni (with C.S.U. Charles Miller)</td>
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<td><em>VIBS Conf. Rm. 107-D</em></td>
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<td>02/15</td>
<td>12:00 pm – 1:30 pm</td>
<td><strong>Lunch Meeting with BIMS Curriculum Subcommittee:</strong> Dr. James Herman (VTPP), Dr. Shannon Wilson (VTPP), Dr. Tawfik Omran (VTPB), Dr. Evelyn Tiffany-Castiglioni (VIBS), Dr. Elizabeth Crouch (Genetics), Dr. Brad Weeks (VTPB), Dr. Terje Raudsepp (VIBS)</td>
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<td><em>VIBS Conf. Rm. 107-D</em></td>
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<tr>
<td>02/15</td>
<td>1:45 pm – 3:45 pm</td>
<td>Meet with Biomedical Sciences Students</td>
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|           | VIBS Conf. Rm. 107-D  | 1:45-2:15 BSA officers  
                              2:30-3:00 Regent scholars  
                              3:15-3:45 General Student population |
| 02/15     | 3:45 pm – 5:45 pm     | Open Processing/Writing time                                         |
|           | VIBS Conf. Rm. 107-D  | This time can also be used to follow up with individuals where necessary |
| 02/15     | 6:00 pm               | Dinner and work session for review team                              |
|           | Rudder-Jessup B&B     |                                                                      |
| Wednesday, 02/16/2011 | Meeting               | Reviewers pack and load rental car prior to arriving at CVM for final meetings and presentations. |
| 02/16     | 7:30 am – 9:00 am     | Provost and Dean’s Office Exit interview with:                       |
|           | Rudder-Jessup B&B     | Dr. Karan Watson (Provost), Dr. Martyn Gunn (Vice Provost), Dr. Karen Butler-Purry (Dean of Graduate Studies), Dr. Pamela Matthews (Associate Provost for Undergraduate Studies), Dr. Eleanor Green (Dean), Dr. Evelyn Tiffany-Castiglioni (Associate Dean Undergraduate Studies) and reviewers. Reviewers present summary of their on-site Review.|
| 02/16     | 9:45 am – 10:30 am    | BIMS office Meeting to hear final report:                           |
|           | VIBS Conf. Rm. 107-D  | Dr. Skip Landis (Assistant Dean), Dr. Elizabeth Crouch (Director), Mrs. Judy Towell (Administrative Assistant), Mr. Brady Dennis (Senior Academic Advisor I), Dr. Henry Huebner (Senior Academic Advisor I), Ms. Lydia Carrascosa (Academic Advisor II), Mrs. Suzanne Rosser (Academic Advisor II) |
| 02/16     | 10:30 am – 11:30 am   | Reviewers make final changes to draft report (as necessary)          |
|           | VIBS Conf. Rm. 107-D  |                                                                      |
| 02/16     | 11:30 am – 12:30 pm   | Reviewers brief faculty, staff, and students on final report         |
|           | Mark Francis Room     |                                                                      |
| 02/16     | 12:30 pm – 1:30 pm    | Lunch Meeting with:                                                  |
|           | Madden’s Casual Gourmet | Dr. Evelyn Tiffany-Castiglioni (Associate Dean Undergraduate Studies), Dr. Skip Landis (Assistant Dean, Biomedical Sciences), Dr. Elizabeth Crouch (Director, Biomedical Sciences Program) |
|           | 202 South Bryan Avenue |                                                                      |
|           | Bryan, Texas 77803    |                                                                      |
|           | 979-779-2558          |                                                                      |
|           | http://pmaddens.com/home.htm |                                                                      |
| 02/16     | 2:00 pm               | Reviewers Depart College Station                                     |
2. BIOMEDICAL SCIENCES PROGRAM OPERATIONS

2.1 Historical Highlights

The BIMS program was established in 1972 as a pre-veterinary B.S. program in the College of Veterinary Medicine & Biomedical Sciences. It was under the leadership of directors until 1996, when Dr. Evelyn Tiffany-Castiglioni was selected as its first Assistant Dean. The title of this position was changed to Associate Dean in 1998. Major changes that have occurred in the BIMS program since 1996 are as follows:

From 1996 to 1999, successful efforts were made to position the BIMS program in the college and university as an academically rigorous pre-professional program not limited to the study of animals. For example, names of courses were changed to reflect the breadth of biomedical science in our curriculum. Thus, the four keystone courses in the BIMS curriculum all bear the descriptive adjective “Biomedical” in their titles. Also, a rigor of the BIMS curriculum and the high quality of its students was objectively demonstrated through analyses of student performance in comparison with peers in other majors.

In 1997, an enrollment management plan was developed at the request of Provost Ronald Douglas to contain the rapidly expanding student numbers in BIMS, which reached about 2300 that year. The plan was fully implemented in Fall 2002. The plan allows any student who is accepted to Texas A&M University to major in BIMS, but the student must meet GPR and course requirements to remain in BIMS after completing approximately 54 credit hours. The outcome has been to reduce enrollment to between 1600 and 1800 students and to increase student quality.

Beginning in 2001, 2+2 articulation agreements were developed with selected community colleges to provide a seamless transfer of qualified students into the BIMS program after completing their A.A. degree in biology or chemistry or equivalent. BIMS currently has 13 such agreements, which contributes to the ethnic and socioeconomic diversity of the student body and serves the State of Texas by increasing access of community college students to further education.

In 2003, the university created the Regents’ Scholars Program to help students from first-generation-in-college undergraduates whose total family annual income is less than $40,000. About 50-70 new Regents’ Scholars per year have enrolled in the BIMS program, out of a total of 650 who matriculate at Texas A&M University each year. Retention and graduation rates are comparable to the BIMS student population as a whole. The BIMS program created a social networking program for Regents’ Scholars as an extension of the Regents’ Scholar program.

In 2004, the name of the college was changed from the College of Veterinary Medicine to the College of Veterinary Medicine & Biomedical Sciences, in part to convey the message that, in addition to training future veterinarians, the college is committed to educating future biomedical scientists at both the graduate and undergraduate levels.

In 2004, the university began to require that students successfully complete two writing-intensive (W) courses taught in their major in order to graduate. Catalogs 127 (academic year 2004-05 and later) require one in-major writing intensive course. Catalogs 130 and later (academic year 2007-8 and later) require two writing intensive courses. The BIMS program developed two new W courses which are taught by faculty who are writing specialists.
In 2005, the BIMS International Certificate in Cultural Competency and Communication in Spanish (Spanish Certificate) was created, and 107 students have completed the requirements to date.

In 2006, the original name of the BIMS undergraduate degree program, Biomedical Science, was changed to Biomedical Sciences by the Texas Higher Education Coordinating Board to match the names of Ph.D. and M.S. Biomedical Sciences degree programs created in the College of Veterinary Medicine & Biomedical Sciences in 2006.

The curriculum was reduced from 135 semester credit hours in 1996 to its present 120 hours in a series of changes required of most majors by the university. Courses removed from the curriculum were two kinesiology credits and 13 elective credits. These changes were in response to a reduction in the common core curriculum and an emphasis by the State on reducing time to graduation.

2.2 Program Overview

The College of Veterinary Medicine & Biomedical Sciences is unique among veterinary colleges in that it administers a large undergraduate program in Biomedical Sciences (BIMS). The BIMS program is a bachelor of science program in the broad field of applied biology related to health and disease. The primary objective of the BIMS curriculum is to provide a strong four year college education that prepares students for productive futures in a changing world. The second objective is to assist students, in a structured way, in orienting and training themselves in areas of selected biomedical vocational interest. The curriculum is designed to provide fundamental knowledge on which to build skills needed for careers in health care professional and biomedical fields.

Over the past 14 years, the BIMS program has established a strong history of excellence in recruitment and graduation of a diverse, well-rounded student population. Of 1696 students in the BIMS program in Fall 2010, 365 are honors-eligible (grade point average of at least 3.5) and 407 are first-generation students. Approximately 65% of freshmen entering BIMS each fall over the last 5 years graduated in the top 10% of their high school class. Notably, the cumulative GPR of BIMS students is 3.09, while that of the rest of the university is 2.86. Of the total BIMS student population, about 67% are female and 35% are non-White. BIMS students are 20% URM, mostly Hispanic, compared to 17% among Texas A&M University undergraduates. In recognition of its outstanding recruitment and retention strategies, BIMS received the 2000 Diversity Award from the Office of the Provost for promoting diversity among the students and faculty at Texas A&M University.

BIMS graduates about 1/3 of the 1100 or so students who receive a BS degree in a biomedical science-related field from Texas A&M University each year. The BIMS program is academically very strong, as indicated by the success of its students after graduation, such as their admission to professional schools. In Fall 2009, 114 BIMS students were admitted to Texas medical schools for about 1200 available seats. In Fall 2009, 30 BIMS students were admitted to Texas dental schools for about 180 available seats. Some students may have received multiple admissions, which cannot be determined from available data. In addition, an estimated 10% enter graduate schools.

The Associate Dean for Undergraduate Education has academic oversight of the BIMS program, and collaborates with staff, basic science department heads, and faculty in maintaining the program. The program is managed by the BIMS professional staff, including an Assistant Dean, a Director, four
academic advisors and an Administrative Assistant. The staff comprises an outstanding team that is exceptionally effective and skilled at addressing student needs.

Faculty and department heads from Veterinary Integrative Biosciences, Veterinary Pathobiology, and Veterinary Physiology and Pharmacology provide required and elective upper division courses in biomedical sciences, including anatomy, microbiology, physiology, and genetics. These three department and the clinical sciences departments, Veterinary Small Animal Clinical Sciences (VSCS) and Veterinary Large Animal Clinical Sciences (VLCS) all offer research and experiential learning courses. The same laboratory facilities used by the veterinary students are also used by BIMS students, which offers an unusually rich learning environment for undergraduate education in applied biology. Lower division courses are taken in the Colleges of Science, Liberal Arts, and others.

2.3 Administration of the Biomedical Sciences Undergraduate Program

2.3.1 Dean and Associate Deans

The administration of the College of Veterinary Medicine & Biomedical Sciences consists of the Dean, an Associate Dean for Professional Programs, an Associate Dean for Research & Graduate Studies, and an Associate Dean for Undergraduate Education.

The administrative structure of the Biomedical Sciences undergraduate program is composed of the Associate Dean for Undergraduate Education, as well as an Assistant Dean for Biomedical Sciences Programs and a Director of Biomedical Sciences. The BIMS program does not have its own faculty, but faculty who teach BIMS courses are located in one of the five departments of the college, each of which is administered by a Department Head.

2.3.2 Professional Staff

The Biomedical Sciences staff is highly trained as advisors and counselors, with the longest-employed Senior Academic Advisor I having 11 years of experience. Each advisor is cross-trained, with eventual advancement in mind. Additionally, one Senior Academic Advisor I and the Director have Ph.D. degrees in Toxicology and Genetics, respectively. Two advisors have M.S. degrees from the College of Agriculture and Life Sciences and are currently pursuing Ph.D. degrees in Educational Administration. The curricula vitae of BIMS staff members and administrators are included in Appendix I. The role of each staff member is as follows:

**Assistant Dean for Biomedical Sciences Programs:** The Assistant Dean interacts with the Dean, Associate Deans, and Departments Heads of the College of Veterinary Medicine & Biomedical Sciences in the administration of the undergraduate program as it relates to their respective departments and coordinates with them on various activities which affect their faculty members. The Assistant Dean also directs student academic advising, recruiting, and student admissions activities of the BIMS program, approves admission and readmission clearances for marginal students and students who have been dropped from the University for scholastic deficiency, and serves on the Texas A&M Academic Operations Committee on behalf of the College of Veterinary Medicine & Biomedical Sciences. The Assistant Dean also oversees the BIMS budget.
**Director:** The Director of the Biomedical Sciences Program “establishes the direction, goals, agendas, implementation strategies and policies of the department. The director assists in the development of short and long-range goals and strategic plans to ensure the continuance of quality programs and facilities and to enhance the development of new programs and services to meet customer needs. The BIMS Director will also oversee the efforts of and globally supervise departmental staff, setting performance standards and accountabilities. It is further the Director’s responsibility to ensure that all programs, activities and services comply with university, state and federal regulations. Finally, the Director serves on various university, division and departmental committees and represents the department at various state and national associations.”

([http://employees.tamu.edu/managers/positions/PayPlans/TitleDescription.aspx?titlecode=7610](http://employees.tamu.edu/managers/positions/PayPlans/TitleDescription.aspx?titlecode=7610))

**Senior Academic Advisor I:** The Senior Academic Advisors I in the BIMS program are “responsible for providing academic advice to undergraduate students and prospective students in areas concerning college admission and readmission, inter-college transfer, professional concerns, housing, financial aid, student services, degree programs, academic schedules, course schedules, course planning and selections, major options, academic probation and career and educational goals. They also design and implement programs intended to facilitate the application, admission, and retention of students. The Senior Academic Advisors will also interpret University and college policies and procedures, verify completion of degree requirements, prepare various academic and advising reports and interact with faculty to provide an exchange of information and to enhance the advisement of students. The Senior Academic Advisors assist in conducting new student orientation conferences for prospective, freshmen, and transfer students in the absence of the Dean or Director and provide oversight of students during new student orientation conferences. The Senior Academic advisors in BIMS also develop and conduct high school and college recruitment programs, including programs for recruitment of graduate students to the College of Veterinary Medicine and Biomedical Sciences.”

([http://employees.tamu.edu/employees/positions/PayPlans/TitleDescription.aspx?titlecode=9944](http://employees.tamu.edu/employees/positions/PayPlans/TitleDescription.aspx?titlecode=9944))

The Senior Academic Advisors have additional duties that are specialized due to the programmatic nature of BIMS. One advisor assists in the administration of the program finances, space and chemical inventory reports and fixed asset inventory reports. Additionally, he administers the Veterinary Enrichment Camp during the summers. The other assists in admissions and first semester advising of students in the BIMS Master non-thesis program of the college. This same advisor is a professor of record for BIMS 484 Internship students.

**Academic Advisor II:** There are two Academic Advisors II in BIMS who “provide academic advice to undergraduate students, visit high schools to present and distribute information concerning University programs and opportunities, advise students and prospective students in areas concerning college admission and readmission, professional concerns, housing, financial aid, student services, degree programs, academic schedules, academic probation, course schedules, course planning and selections, major options, and career and educational goals. These advisors also develop and revise informational materials, handbooks, and newsletters for students and departments, meet with prospective students, meet with freshmen and transfer students during new student orientation conferences and conduct various recruitment programs. Through the MERGE program, these advisors foster retention of an identified group of students through activities such as mentoring, monitoring of student grades, and other support.”

([http://employees.tamu.edu/employees/positions/PayPlans/TitleDescription.aspx?titlecode=9943](http://employees.tamu.edu/employees/positions/PayPlans/TitleDescription.aspx?titlecode=9943))
BIMS Academic Advisors II have additional duties such as assisting the Director in oversight of Study Abroad and the Spanish Certificate program, oversight of the Biomedical Sciences Association student group, and assisting faculty and the Director in course inventories and monitoring prerequisites.

**Administrative Assistant:** The BIMS Administrative Assistant “serves as office manager and supervises, trains and evaluates the work of our two to three student workers. The Administrative Assistant serves as a personal assistant to the Asst. Dean, Director and Academic Advisors, provides administrative support for specialized activities and projects, provides agendas and staffing assistance to meetings, applies and interprets and communicates University policies and procedures and serves as a resource for such. The BIMS Administrative Assistant maintains keys and placards, assists in resolving complex, highly sensitive and confidential administrative matters, supervises the creation and maintenance and retention of office files and records, monitors office procedures to eliminate duplication of effort and to streamline flow of operations and maintains office supplies and equipment. The Administrative assistant also helps the Director and Senior Academic Advisors to research, compile and apply information, making evaluative judgments on appropriate data to use and gathers information and conducts research in support of departmental administrators. She serves as a liaison for departmental equipment and service contracts, creates and maintains administrative databases and prepares presentation and communication materials.”

([http://employees.tamu.edu/managers/positions/PayPlans/TitleDescription.aspx?titlecode=9293](http://employees.tamu.edu/managers/positions/PayPlans/TitleDescription.aspx?titlecode=9293))

The BIMS Administrative Assistant is also an HR Liaison to the BIMS program, oversees payroll for biweekly employees and has a significant role in the administration of the program finances as an “enterer” and “purchaser” for products and reimbursements. She also helps to administer the Veterinary Enrichment Camp during the summers and assists the Senior Academic Advisor in preparation of materials and documents for the camp.

The table below lists key awards given to the BIMS staff and is an indication of the quality advising available to BIMS undergraduate students.

<table>
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<tr>
<th>NAME</th>
<th>TITLE</th>
<th>HONOR/RECOGNITION</th>
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<tbody>
<tr>
<td>Elizabeth Crouch, Ph.D.</td>
<td>Director</td>
<td>Group Leadership Forum (by nomination for leadership)</td>
</tr>
<tr>
<td>Brady Dennis, M.S.</td>
<td>Senior Acad. Adv. I</td>
<td>Texas A&amp;M University 2008 President’s Award for Academic Advising</td>
</tr>
<tr>
<td>Lydia Carrascosa, M.S.</td>
<td>Acad. Adv. II</td>
<td>Fish Camp Namesake (nominated by students for outstanding student mentorship)</td>
</tr>
<tr>
<td>Suzanne Rosser, B.S.</td>
<td>Acad. Adv. II</td>
<td>Hired one year ago; Previous employment in the Registrar’s office, specifically Degree Audit, affords the BIMS office a wealth of knowledge</td>
</tr>
<tr>
<td>Judith Towell</td>
<td>Admin. Asst.</td>
<td>CVM Staff Award</td>
</tr>
</tbody>
</table>
2.3.3 Committees

Biomedical Sciences Executive Committee: This committee is charged with oversight advisory responsibility for all aspects of the Biomedical Sciences program. The committee reports to the dean. Membership is appointed by the dean in consultation with the College Executive Committee. Members are the Associate Dean for Undergraduate Education (chair), the Assistant Dean for Biomedical Sciences Programs, and the heads of the three basic science departments in which BIMS faculty are located (Veterinary Integrative Biosciences, Veterinary Pathobiology, and Veterinary Physiology and Pharmacology). This committee meets on an as-needed basis and makes decisions related to BIMS academics and funding.

Biomedical Sciences Curriculum Subcommittee: This committee is responsible for developing, monitoring, and adjusting the curriculum to meet the educational needs of undergraduate students. In fulfilling this charge, the Committee shall articulate the educational philosophy of the faculty by providing the framework through which the best possible biomedical education can be delivered. The committee is appointed by the Dean’s designate, the Associate Dean for Undergraduate Education, who consults with the basic science department heads. It consists of the Associate Dean, the Director of BIMS, and two members from each of the three participating departments. It is chaired by a faculty member selected by the faculty, who calls meetings on an as-needed basis. Recommendations by this subcommittee that require approval by the University Curriculum Committee must first be approved by the CVM Curriculum Committee.

2.4 Budget Information

The Biomedical Sciences program is administered through the Dean’s office of the College of Veterinary Medicine & Biomedical Sciences. An Advising Account for BIMS is managed through the Dean’s office. In addition, the BIMS office manages funds through 5 accounts in its own office, which are administered by the Assistant Dean of Biomedical Sciences Programs, the Director and a Senior Academic Advisor I. These accounts are listed in the BIOMEDICAL SCIENCES ACCOUNTS table on the next page. Budget and fiscal responsibilities are overseen by the college’s Assistant Dean of Finance.

The Biomedical Sciences budget is largely comprised of salaries for personnel. The lump sum salary expenditures for the Director, Academic Advisors, and an Administrative Assistant in FY2010 were $273,295. An additional $8851.44 was spent in FY 2010 for student worker positions. The largest account managed by the BIMS office is used for salaries, with the balance of salaries paid from the Dean’s Advising Account. The Dean’s office also pays for some recruiting expenses, as shown in the BIMS FY2010 EXPENDITURES FROM ADVISING ACCOUNT table on the next page.

The FY2010 expenditures for travel related to recruitment were $3850. BIMS advisors visited approximately 250 high schools during the Fall 2009 and Spring 2010 semesters. BIMS professional staff also attend state and national meetings such as TAAHP, NACADA, TEXAAN, and NAAHP. Travel for attendance at various meetings for continuing educational purposes amounted to $4,700. “Give-aways” and pens cost $3700 during the FY2010 period. The remainder of the budget was operating expenses, $11,100, and expenditures related to business meals, conferences and awards, $2,200. The Veterinary Enrichment Camp costs approximately $23,000-$24,000 a year. Attendees pay a camp fee and excess earnings are used, typically, for recruitment and associated costs.
<table>
<thead>
<tr>
<th>Account #</th>
<th>Account Name</th>
<th>FY09 Actual Bal 08/31/2009</th>
<th>FY10 Actual Bal 08/31/2010</th>
<th>FY10 Expenditures 08/31/2010</th>
<th>Estimated Portion of FY10 Projected Balance to be Spent in FY2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>1XXXXX</td>
<td>BIMS - Biomedical Sci</td>
<td>38,096</td>
<td>70,266</td>
<td>113,000</td>
<td>50000</td>
</tr>
<tr>
<td>1XXXXX</td>
<td>Biomedical Science - Graduate Prgm</td>
<td>45,000</td>
<td>45,000</td>
<td>0</td>
<td>45000</td>
</tr>
<tr>
<td>1XXXXX</td>
<td>Vet Med - Biomedical Science</td>
<td>501</td>
<td>501</td>
<td>0</td>
<td>501</td>
</tr>
<tr>
<td>2XXXXX</td>
<td>CVM Enrichment Prgr</td>
<td>24,125</td>
<td>27,448</td>
<td>24,700</td>
<td>16000</td>
</tr>
<tr>
<td>2XXXXX</td>
<td>Biomedical Sci</td>
<td>19</td>
<td>19</td>
<td>0</td>
<td>19</td>
</tr>
</tbody>
</table>

**BIMS FY2010 EXPENDITURES FROM DEANS OFFICE ADVISING ACCOUNT**

<table>
<thead>
<tr>
<th>Expenditure totals for FY10</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall 2009 giveaways</td>
<td>3000</td>
</tr>
<tr>
<td>HS Recruiting Travel fall 09</td>
<td>2500</td>
</tr>
<tr>
<td>HS Recruiting Rental fall 09</td>
<td>1350</td>
</tr>
<tr>
<td><strong>Total HS recruiting expenses</strong></td>
<td><strong>6850</strong></td>
</tr>
<tr>
<td><strong>Non HS recruiting travel expenses</strong></td>
<td></td>
</tr>
<tr>
<td>Fall 2009/Spring 2010 travel</td>
<td>4700</td>
</tr>
<tr>
<td>BIMS writing pens</td>
<td>700</td>
</tr>
<tr>
<td><strong>Total recruiting/travel expenses</strong></td>
<td><strong>5400</strong></td>
</tr>
<tr>
<td><strong>Office Operating Expenses</strong></td>
<td></td>
</tr>
<tr>
<td>Copier Rental</td>
<td>2700</td>
</tr>
<tr>
<td>Phone</td>
<td>4200</td>
</tr>
<tr>
<td>Mail</td>
<td>1800</td>
</tr>
<tr>
<td>Supplies/Other</td>
<td>2400</td>
</tr>
<tr>
<td><strong>Total Office Operating Expenses</strong></td>
<td><strong>11100</strong></td>
</tr>
<tr>
<td><strong>Honors/Awards/Excellence Expenses</strong></td>
<td></td>
</tr>
<tr>
<td>Business Meals</td>
<td>500</td>
</tr>
<tr>
<td>4.0 Graduate Awards</td>
<td>1500</td>
</tr>
<tr>
<td>Conferences</td>
<td>200</td>
</tr>
<tr>
<td><strong>Total Honors/Awards/Excellence</strong></td>
<td><strong>2200</strong></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>25550</strong></td>
</tr>
</tbody>
</table>
3. **BIOMEDICAL SCIENCES VISION & GOALS**

3.1 **Texas A&M University Vision 2020**

In 1999, Texas A&M University articulated *Vision 2020: Creating a Culture of Excellence*, a strategic plan to attain recognition as a consensus leader among peer public institutions by the year 2020. More than 250 stakeholders worked to identify benchmarks, which if achieved, would enhance the value of Texas A&M University to The Texas A&M University System, the State of Texas, and the nation. *Vision 2020* identifies twelve specific areas of focus, which are underscored as imperatives that define accepted precepts and goals that the university will target over the course of two decades. The 12 imperatives are:

1. Elevate our faculty and their teaching, research, and scholarship
2. Strengthen our graduate programs
3. Enhance the undergraduate academic experience
4. Build the letters, arts, and sciences core
5. Build on the tradition of professional education
6. Diversify and globalize the A&M community
7. Increase access to knowledge resources
8. Enrich our campus
9. Build community and metropolitan connections
10. Demand enlightened governance and leadership
11. Attain resource parity with the best public universities
12. Fulfill our commitment to Texas

3.2 **Mission, Goals, and Objectives of the Biomedical Sciences Undergraduate Program**

The mission on the Biomedical Sciences Program is to provide a strong four-year education that emphasizes versatility of the graduate in the biological and medical sciences. Biomedical Sciences is a broad field of applied biology that is directed toward an understanding of health and disease. The Biomedical Sciences Program represents and teaches from the perspective of “One Health, One Medicine,” educating students in preparation for both veterinary and human medical arenas. Our mission directly supports Imperatives 1, 3, 6, 9, and 12 of *Vision 2020*.

Our goals are to prepare current students for professional programs, graduate studies or employment in biomedical science-related fields. We will endeavor to increase the total number of students who continue their education or obtain post-graduate employment, and will diversify and globalize the Biomedical Sciences community.

In order to achieve the four major goals of the program, we will track students to demonstrate they have an understanding of concepts of applied biological sciences as they relate to health and disease in animals and humans. We will determine whether students demonstrate their ability to engage in biomedical research by participating in an active research laboratory. We will endeavor to retain students in order for students from diverse socioeconomic and cultural backgrounds to complete a B.S. degree in Biomedical Sciences. Finally, we will increase multicultural awareness and opportunities for engagement in multicultural experiences.
The goals of the Biomedical Sciences program related to these vision statements are captured in our Academic Assessment Matrix, together with expected outcomes and measurements. Measures and findings for the assessment will be reported in Section 4.7 Program Assessment.

<table>
<thead>
<tr>
<th>GOALS</th>
<th>OUTCOMES/OBJECTIVES</th>
<th>MEASURES /FINDINGS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prepare students for future education/employment</td>
<td>Students will gain a comprehensive knowledge underlying concepts of health and disease</td>
<td>We will measure student readiness for medical professional programs</td>
</tr>
<tr>
<td>Increase number of students continuing education or obtaining employment</td>
<td>Students will gain a working knowledge of the process of scientific discovery</td>
<td>Students will engage in laboratory research and will gain a working knowledge of the process of scientific discovery</td>
</tr>
<tr>
<td>Diversify the Student Population</td>
<td>BIMS will increase student diversity</td>
<td>BIMS will retain and graduate underserved students, including Underrepresented Minorities and First Generation Students</td>
</tr>
<tr>
<td>Globalize Student Experience</td>
<td>BIMS will increase student global awareness</td>
<td>BIMS will foster global awareness and we will measure students’ global awareness by collecting data concerning their multicultural experiences</td>
</tr>
</tbody>
</table>

The objectives in our Assessment Matrix are aligned with the General Education and Core Curricular goals of Texas A&M University, the Texas A&M University Strategic Plan and Texas A&M University Institutional Priorities. The relevant associations are as follows:

1. Master the depth of knowledge required for a degree
2. Demonstrate critical thinking
3. Strengthen our graduate programs
4. Communicate effectively
5. Enhance the Undergraduate Academic Experience
6. Expand research and inquiry-based learning opportunities
7. Demonstrate social, cultural and global competence
8. Practice personal and social responsibility
9. Prepare to engage in lifelong learning
10. Work collaboratively
11. Diversify and globalize the A&M community
12. Enrich our campus
13. Expand off-campus opportunities, such as internships, study-abroad and service-learning
14. Meet our commitment to Texas
4. BIOMEDICAL SCIENCES ACADEMICS

4.1 Student Recruitment

Since 2000, the BIMS program has implemented new strategies to increase both student quality and minority enrollment, including the redefinition of target high schools for recruitment and the formation of 2+2 articulation agreements with 13 selected community colleges that have at least 20% minority enrollment. The community colleges with which BIMS has agreements are: Austin Community College, Blinn College, Cisco Junior College, Dallas County Community College, McLennan Community College, Midland College, Northeast Texas Community College, Odessa College, Palo Alto College, Paris Junior College, Temple College, Tyler Junior College, and Weatherford College. A sample 2+2 agreement is located in Appendix II. Four BIMS advisors visit approximately 250 high schools per year to inform Texas students and their counselors and teachers about opportunities in Biomedical Sciences. The schools include large and mid-sized public high schools and selected HOSA and Science Magnet schools, the selection of which is based on 20 years of historical data identifying which schools produce students who matriculate into Texas A&M University and BIMS. This regular communication has created trusting relationships between the schools and BIMS and has led to increased quality and diversity of students who enroll and graduate.

4.2 Student Admission and Enrollment

4.2.1 Freshmen, Change of Majors, and Transfer Students

BIMS is an open admission major for Freshmen (First Time in College students). Therefore, any student admitted into Texas A&M University is also admitted into BIMS if he or she so chooses, regardless of class rank or test scores. BIMS has a 72% yield rate (the percentage of freshmen who enroll out of those who were admitted to BIMS) each Fall semester. The yield rate for Texas A&M University overall is 56%.

BIMS accepts Change of majors from other Texas A&M University departments if the following requirements are met: 1) minimum GPR of 2.5 at Texas A&M University, 2) one completed semester at Texas A&M University, and 3) all Common Body of Knowledge (CBK) courses completed (not in progress) with at least a "C" in all courses. The change of major into Biomedical Sciences must occur before the student completes 75 semester credit hours. CBK courses are listed in Section 4.4.3 Common Body of Knowledge (CBK) Courses.

BIMS readily accepts Transfers from other schools, especially those within its 2+2 Articulation Agreements. The transfer student must have minimum GPR of 3.0 and must have completed all CBK course with at least a "C" in all courses to be considered. However, any CBK courses transferred in from a community college must have a minimum grade of a "B". Students who have completed more than 45 semester credit hours at the time of application are given preference for admission. The transfer into Biomedical Sciences must occur before the student completes 75 semester credit hours.

4.2.2 Assistance to Transition for Transfer Students

Advisors and faculty in the BIMS program employ the following practices to assist students with transferring from community colleges to the BIMS program at Texas A&M University under our 2+2
articulation. These practices provide an organized transfer process that incorporates attention to academics, social aspects of transfer, and financial aid.

- Interactions between BIMS academic advisors and students and faculty at the community colleges to monitor the progress of students planning to enter the BIMS program.
- A yearly program (currently in its seventh year) during which 2+2 students, counselors, and parents come to Texas A&M University to tour facilities and receive information concerning academics, career opportunities, and financial aid.
- One-on-one academic counseling by the BIMS professional staff, including regularly scheduled meetings once per semester and other appointments as needed.
- Mentored research for course credit that may be taken for up to 9 semester credit hours with faculty mentors who are active researchers and have demonstrated success in mentoring undergraduate researchers, particularly underrepresented minority students. About 70 BIMS students conduct faculty-mentored research each semester.
- Access to numerous opportunities in support of undergraduate research at Texas A&M University, such as Student Research Week and the Undergraduate Research Scholars Program.
- Enrollment of targeted groups of students, particularly first generation and transfer students, as cohorts in their first upper division biomedical science classes at Texas A&M University, in order to encourage the participation in study groups.

4.3 Financial Assistance for Biomedical Sciences Students

Financial assistance to BIMS and other Texas A&M University students is available in the form of grants, scholarships, and loans. About 70% of Biomedical Sciences students receive some form of financial aid. The Biomedical Sciences program administers six scholarships: The Raymond Dickson Foundation Scholarship (for all BIMS students in good academic standing who are from Lavaca Co, Texas as a permanent residence), the BSA scholarship, the BSA Parents' Association Scholarship, the Peter F. Meier Memorial Scholarship, the Dr. & Mrs. Ralph Clark Dunn Memorial Scholarship, and the Alison Lindorfer, O.D., Endowed Biomedical Science Scholarship. Students apply for these and all other competitive scholarships through the Continuing Student Scholarship application by February 1 of each year. Further details about these scholarships may be found in Appendix III.

Biomedical Sciences students may also apply for need-based financial aid. In order to qualify, students must complete a Free Application for Federal Student Aid (FAFSA). They must also complete the appropriate financial aid application: Incoming Student Financial Aid Application, Continuing Student Application or Texas A&M Summer Supplement. The Incoming Student Financial Aid Application is available through the Apply Texas web portal and is filled out as students apply to Texas A&M University. The other applications are available online at http://myfinancialaid.tamu.edu. Financial aid advisors are available to assist students by appointment or on a walk-in basis. The process for obtaining financial aid at Texas A&M University consists of four steps: 1) The student completes applications as early as possible to be considered for all federal/state grants and student loans; 2) FAFSA information is processed and the student is notified of his or her financial aid eligibility for the academic year; 3) The awarding of all federal and state aid is done on a first come, first served basis and the admitted student is notified of any award through his or her financial aid tab in the Howdy web portal, as well as by official letter; and 4) A student, once notified of an award for financial aid, must accept or reject the aid at the above website. Students are notified separately of scholarships.
The probable financial aid package for a student who qualifies for a Federal Pell Grant and a Toward Excellence, Access & Success (TEXAS) grant is as follows for Fall 2010 and Spring 2011 semesters:

<table>
<thead>
<tr>
<th>Amount</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>$20,614</td>
<td>2010-11 Cost of Attendance for a Resident Undergraduate (latest available)</td>
</tr>
<tr>
<td>- $4,050</td>
<td>Federal Pell Grant/Expected Family Contribution (EFC) combination</td>
</tr>
<tr>
<td>$16,564</td>
<td>Need after Pell</td>
</tr>
<tr>
<td>- $4,750</td>
<td>State Grant (TEXAS Grant)</td>
</tr>
<tr>
<td>$11,814</td>
<td>Remaining Need after State Grant</td>
</tr>
</tbody>
</table>

4.4 Degree requirements

4.4.1 Curriculum Overview

In the Biomedical Science curriculum, there are 120 semester credit hours to be completed for the B.S. degree. Within that number there are 84 semester credit hours of specified courses. The remaining 36 semester credit hours constitute electives. Within the elective hours, students have options within certain constraints. Three of the 36 semester credit hours must be taken in approved courses in the social sciences, three in humanities, three in visual and performing arts, and 24 must be from biomedical sciences directed electives. The remaining 3 semester credit hours of undirected elective courses may be, but are not restricted to, biomedical science directed electives. Any other courses the student wishes to experience are acceptable within university offerings, curriculum limitations, and prerequisite requirements. A summary of course requirements is presented below. A degree plan is included in Appendix IV.

<table>
<thead>
<tr>
<th>Courses</th>
<th>Semester credit hours needed</th>
</tr>
</thead>
<tbody>
<tr>
<td>University Core Curriculum – 43</td>
<td>6 communication, 6 math, 8 natural science, 3 humanities, 3 visual and performing arts, 3 social and behavioral sciences, 12 US history and political science, 6 cultural diversity, 2 kinesiology</td>
</tr>
<tr>
<td>BIMS 101 – 1</td>
<td></td>
</tr>
<tr>
<td>Common body of knowledge (CBK) courses – 24 (includes 14 from Core)</td>
<td>38 (8 each freshman biology, inorganic chemistry, organic chemistry, physics; 6 math) 14 are part of Core; net 24</td>
</tr>
<tr>
<td>BIMS required upper division science courses – 25</td>
<td>8 biochemistry, 4 anatomy, 3 genetics, 5 microbiology, 4 physiology, 3 statistics</td>
</tr>
<tr>
<td>W courses – 2</td>
<td>BIMS 481-1 and 481-2</td>
</tr>
<tr>
<td>BIMS directed electives 22</td>
<td>From list on degree plan</td>
</tr>
<tr>
<td>Free electives – 3</td>
<td></td>
</tr>
</tbody>
</table>

By proper selection of elective courses within the University Core Curriculum, the 3 semester credit hours of non-directed electives and the 24 semester credit hours of biomedical science directed electives, students may elect a vocational emphasis. The emphasis pertains to an area in which the student has unique interest and in which the student desires engagement upon graduation with a baccalaureate degree. A vocational emphasis provides increased knowledge and employment potential in a particular vocational area, and indicates to a potential employer, graduate or professional school a
determined effort on the part of the student to become more fully prepared for post-baccalaureate employment or education.

Freshman and sophomore courses are typical of a biology degree, but junior and senior (upper level) courses focus on applied mammalian biology. BIMS freshmen complete a one-hour course exposing them to career options (BIMS101), orienting them to the Medical Sciences Library and career services on campus, and introducing them to professional ethics. The required upper division courses are biochemistry, biomedical anatomy, physiology, biomedical microbiology, biomedical genetics, and statistical methods. Sixteen hours of BIMS-directed electives are also required, including course options such as histology, advanced physiology, immunology, advanced human genetics, pharmacology, toxicology, neuroscience, endocrinology, virology, and parasitology. This variety of electives allows students to customize their degree to fit their occupational goals. Students may formally specialize in their studies by adding a minor or by participating in the Spanish Certification Program. Qualified students may participate in the University Honors Program. Moreover, students may take 485 Directed Studies courses for credit towards the BIMS degree, which are available in diverse research areas such as cardiovascular science, neuroscience, toxicology, mammalian genomics, and epidemiology. About 70-100 BIMS students per semester take 485 courses.

4.4.2 University Core Curriculum

The University Core Curriculum at Texas A&M University assures that all undergraduate programs provide for breadth of understanding. The Core Curriculum emphasizes competence in the process of learning, the capacity to engage in rigorous and analytical inquiry, and the ability to communicate clearly and effectively. It supports the development of extensive knowledge about and appreciation for our cultural heritage, our social and moral responsibilities, and our interactions with the economies and cultures of the international community. The University Core Curriculum acts to enrich and broaden the University’s tradition of providing thorough preparation in each student’s academic major. University Core Curriculum requirements includes approved courses in communication, mathematics, natural sciences, humanities, visual and performing arts, social and behavioral sciences, history, and political sciences. These requirements must be met by every student pursuing a baccalaureate degree program at Texas A&M University, regardless of his or her major.

4.4.3 Common Body of Knowledge (CBK) Courses

Biomedical Sciences students are required to complete a set of Common Body of Knowledge (CBK) courses. These courses consist of 35 semester credit hours to include BIOL 111 & 112, (previously BIOL 113, 123, 114 & 124), CHEM 101 (now CHEM 101/111), CHEM 102 (now CHEM 102/112), CHEM 227, 237, 228 & 238, PHYS 201, 202 and MATH 131) with a grade of C or better in each course. Normally, for admission to BIMS upper level courses, a student may have attempted a CBK course no more than twice.

4.4.4 Core Upper Division BIMS Courses

Biomedical Sciences students progress to upper division courses in the curriculum after they have completed a minimum of 55 semester hours with a cumulative resident Texas A&M University GPR of 2.5 or better. Students are required to take four foundational courses in their junior and senior years: Biomedical Anatomy, Biomedical Physiology, Biomedical Microbiology and Biomedical Genetics. Syllabi
for these courses are included in Appendix V. A summary of the course objectives is given below, as provided by professors teaching these courses:

**Course Description Biomedical Anatomy:** VIBS 305 is a comprehensive mammalian gross anatomy course, using dog as the model species. Course will utilize both lectures and laboratory dissection. Veterinary nomenclature with human correlates will be emphasized along with relevant physiology in order to facilitate structure and function relationship. Brief clinical relevance will be provided. 
Instructor: Balaji Ramanathan

**Course Description Biomedical Physiology:** The goals of VTPP 423 are for students 1) to understand the physiological significance of cells, organs and organ systems in maintaining homeostasis of the mammalian organism, 2) to develop critical thinking, problem solving and self-learning skills in preparation for a career in medicine/science, and 3) to gain experience in the use of modern physiological data acquisition equipment and the application of computers in the statistical analysis of data. Instructor: Jon Hunter

**Course Description Biomedical Microbiology:** Lectures in VTPB 405 emphasize the fundamentals of bacteriology, immunology, mycology, virology and selected infectious diseases of humans and domestic animals. Laboratories emphasize the culture and identification of selected bacterial and fungal pathogens of humans and domestic animals. Instructor: Charles Scanlan.

**Course Description Biomedical Genetics:** BIMS 320 is meant to be an introduction to the study of human genetics. The material will be divided into five primary areas: transmission, molecular, cyto-, population, and quantitative genetics. In addition, we will be examining various genetic diseases, including their underlying causes, detection, and treatment (if any). We will explore different medical and research advances that make use of genetic information; particularly those areas of research that are pertinent to the disease topics we discuss. We will also cover medical ethics with regards to advances in genetic technology, immunogenetics, cancer genetics and an introduction to genomics. Instructor: Elizabeth Crouch.

### 4.4.5 BIMS-Directed Elective Courses

BIMS faculty offer 34 BIMS directed electives in anatomical sciences, genetics and bioinformatics, physiological chemistry, physiology, pharmacology, microbiology, infectious disease, pathology, and science writing. The objectives of each course as provided by the instructors are summarized below.

**BIMS 101 Seminar in Biomedical Sciences Course Objectives:** Designed to give students an awareness of several different possible career alternatives in the field of health care. Guest presentations and an online assignment will help to increase students’ understanding of these career fields.

**BIMS 289 Introduction to Genetic Expressions in the Context of Modern Medicine Course Objectives:** This course is meant to be an introduction to the study of human genetics, specifically with respect to gene expression as pertains to the cell cycle, development, cancer, aging and epigenetics. Discussions and debates surrounding medical examples and case studies will be included in the course.

**BIMS/GENE 405 Mammalian Genetics Course Objectives:** To critically examine comparative mammalian genomic systems with emphasis on laboratory animals; To examine the organization and
expression of mammalian genes; To appreciate the development and use of genetically defined animals in biomedical and genetic research.

**BIMS/GENE 421 Advanced Human Genetics Course Objectives:** Will update students on new developments in human genetics and teach them to “critically evaluate” its impact on human health care both in the present and future. Will provide insights into the subtle but pervasive role of human genetics in the “post-genomic era,” i.e. the ethical, legal and social issues surrounding the availability of vast amounts of “personal” genetic information.

**BIMS 481-1 Seminar in Biomedical Science: Seminar in Writing Course Objectives:** Using a variety of writing-intensive assignments, we aim to strengthen the students’ skills for communicating science to both the general public and scientific professionals.

**BIMS 481-2 Seminar in Biomedical Science: Seminar in Writing Course Objectives:** This course—which consists mainly of reading, discussing, writing about, and composing brief nonfiction on biomedical topics—is designed mainly to help students explore human and veterinary medicine and the science underlying it and continue to strengthen writing skills.

**BIMS 484: Internship Course Objectives:** This course provides opportunities for learning and training experiences in the Biomedical Science industry which are appropriate to the student’s career goals; professional supervision required.

**BIMS 485 Directed Studies (Spanish Certificate) Course Objectives:** This course is meant to be a means of obtaining shadow hours for professional school and to work on a personal essay for applications. An emphasis should be given to using Spanish language skills gained through the “Spanish Certificate” program for Biomedical Sciences students. As such, at least 75% of your hours should be where you are actively using the Spanish language. Through shadowing, journal work and discussion with professionals and paraprofessionals, the student should ascertain an area of biomedicine in which they are interested, ascertain particular strengths in working with clients, learn about managed health care systems and find a focus for graduate/professional studies.

**VIBS 343 Histology Course Objectives:** To develop the ability to examine and identify microscopic features of the various cells tissues and organs of mammals. There will be significant focus on major physiological systems to correlate structure with function. To provide students with a comprehensive exposure to microanatomy that will be beneficial to their success in this discipline should they enter a professional curriculum.

**VIBS 404 Food Toxicology and Safety Course Objectives:** Upon completion of this course students should: 1) Know the toxicity of foods and food additives, understand chemical and microbial contaminants, and appreciate the prevention of food-associated diseases; 2) Be able to identify food safety hazards, know the risk of disease transmission and describe control and/or prevention strategies; 3) Be able to list the governmental agencies that handle food safety issues; 4) Be able to describe / discuss current key issues in food safety and anticipate future food safety problems.

**VIBS 404H Food Toxicology and Safety Honors Course Objectives:** Promote a basic understanding of the fundamentals of toxicology and risk assessment, along with an awareness and appreciation of the
the paradox associated with food safety. Emphasize global problems and misconceptions in food safety. Encourage an understanding of contemporary issues in food safety.

**VIBS 420 Computer Applications in Public Health Research Course Objectives:** Teach the fundamentals of computers and computer nomenclature, particularly with respect to personal computer hardware and software, and the World Wide Web. Give students an in-depth understanding of why computers are essential components in bio-sciences, business and society in general. Give students an interactive experience with computers and the World Wide Web. Strengthen student computing skills through group and personal projects/assignments.

**VIBS 443 Mammalian Cells and Tissues Course Objectives:** To have classical histology merged with modern cell biology by learning the relationship between cell structure and cell function, and how organ architecture facilitates its function; To improve written communication skills and increase awareness of issues in the medical field and their implications.

**VIBS/NRSC 450 Mammalian Functional Neuroanatomy Course Objectives:** Students will learn morphology, gross anatomy, and physiology of the nervous system in domestic animals and humans. Students will apply their basic knowledge in learning clinical case studies as well as reading up-to-date neuroscience research papers.

**VIBS 489 Neuroendocrinology Course Objectives:** To identify the importance of endocrinology in biomedical sciences. To analyze and differentiate functions and dysfunctions of endocrine organs during physiological processes and pathological conditions. To synthesize and develop knowledge in endocrinology and to apply this knowledge to professional career development.

**VIBS 489 Special Topics in Biomedical Science-Science in Popular Culture Course Objectives:** As science and technology become increasingly pervasive in popular culture the lines between factual science and scientific fantasy become harder to distinguish, especially for the general public. My goal is foster your ability to critically evaluate the “science” you encounter outside the academic setting. This course is designed to help you become more cognizant of how scientific principles are conveyed through modern cinema, to increase your ability to communicate scientific concepts verbally and to strengthen your general writing skills.

**VIBS 489 Developmental Neurotoxicology Course Objectives:** Provide an overview of normal central nervous system (CNS) development; introduce basic principles of toxicology; develop an understanding of how major environmental toxicants affect CNS development. This course covers effects of toxic substances on the developing CNS and we will study common toxicants known to damage the developing CNS such as lead and mercury. Course is taught as if it is a W course and it will be a W course next year when it becomes a permanent course. (W=Writing intensive course).

**VTPB 221 Great Diseases of the World Course Objectives:** An introductory course designed to explore major infections and parasitic diseases afflicting humans and other mammals. While focusing on selected key diseases such as the plague, tuberculosis, influenza and yellow fever, the course explores their influence on history and literature, their social and medical consequences, and their causes, treatment and prevention.
VTPB 301/WFSC 327 Wildlife Diseases Course Objectives: Basic mechanisms of diseases as they occur in wildlife populations; interplay of habitat requirements, individual physiological requirements and disease producing mechanisms of varied wildlife species.

VTPB 409 Introduction to Immunology Course Objectives: Familiarize students with the basic features of the immune system. Student should be able to: 1) Identify the different components of both the innate and acquired immune systems; 2) Explain the antibody and cellular immunity; 3) Explain how the body reacts to non-self under normal conditions; and 4) Identify abnormalities of the immune system.

VTPB 410 Cell Mechanisms of Disease Course Objectives: Mechanisms, morphologic manifestations and clinical signs of disease processes at the cellular level. The course considers fundamental, cellular mechanisms of disease. Gross, microscopic and clinical findings of example diseases are used for illustration.

VTPB 415 Immunogenetics and Comparative Immunology Course Objectives: Provide strong background in the unique genetic mechanisms operating in the vertebrate adaptive immune system; Survey selected innate systems; Focus on molecular immunology of antigen recognition; Explore divergent systems outside of mouse and man, guided by natural history.

VTPB 421 Bacterial Diseases of Humans and Animals Course Objectives: Pathogenesis of selected bacterial pathogens of humans and animals; bacterial virulence factors, host immune responses; current concepts of extracellular, facultative intracellular and obligate intracellular bacterial diseases.

VTPB 438 Biomedical Virology Course Objectives: 1) acquire knowledge of the biochemical and biologic characteristics of the major human and animal viral pathogens; 2) acquire knowledge of virus/host interactions common to all viruses; 3) understand methods used to discover and characterize viruses.

VTPB 487 Biomedical Parasitology Course Objectives: Gain an understanding of fundamental concepts of parasitology, including principles of basic biology, physiology, morphology, and ecology of the major parasites of humans and domestic animals; Learn to identify common taxa of parasites (and their vectors), practice common diagnostic techniques, and associate specific helminths and protozoa with diseases in humans and domestic animals.

VTPB 489 Genetic and Epigenetic Mechanisms of Disease Course Objectives: This course will focus on de novo and inherited, genetic and epigenetic mechanisms of disease, affecting both humans and animals. The course will cover the basics of genomics, epigenomics, advanced genetic testing tools, animal models of human genetic disorders, gene and stem cell therapy, ethics, and the future of genomics in human and animal disease. Topics will include: genetics, epigenetics, genomic imprinting, chromosomal aneuploidies, genomic rearrangements, classical mutations, de novo and inherited mutations, genetic testing, spontaneous and engineered animal models of human disease.

VTPB 489 Physiological Chemistry I Course Objectives: The student will understand: 1) Basic principles of cell organization and functions, 2) Regulation of blood pH and biological buffers, 3) How the cell duplicates its genome and replaces its protein pool, 4) Protein structure, folding and transport, 5) Diseases caused by pH imbalance, aggregated proteins and origins of genetic disease, 6) Carbohydrate structure and nomenclature, 7) The importance of lipids and sterols in the operation of the cell.
Enzyme function, mechanisms and regulation; operation of enzyme inhibitors, and 8) DNA replication, transcription, and translation of mRNA.

**VTPB 489 Physiological Chemistry II Course Objectives:** 1) Understanding of key metabolic pathways, cofactors, clinical aspects, energy production, signal transduction; 2) Basic metabolic pathways functional in mammalian cells and defects in metabolism resulting in human and animal disease. Each section is complemented with clinical applications with emphasis on direct correlation with mammalian health and disease.

**VTPB 489 Mammalian Cell Pathology Course Objectives:** 1) Integrate structure and function of mammalian cells; 2) distinguish signaling pathways underlying essential cellular processes, including intracellular trafficking, cell migration, cell proliferation, and apoptosis; 3) recognize how perturbation of such signaling pathways is linked to disease development; 4) interpret the underlying principles of cellular and molecular mechanisms in health and disease; 5) appreciate the importance of Cell Pathobiology in the broad context of Biomedical Sciences.

**VTPP 401 (Study Abroad) History of Human and Veterinary Medicine in EuropeCourse Objectives:** Addresses the major developments in human and veterinary medicine in Europe from the Middle Ages to the present; Explores key events and figures in medical history and analyzes issues of current biomedical concern in an historical context, for example, animal rights, ethics of human experimentation, euthanasia.

**VTPP 425 Pharmacology Course Objectives:** Introduction to pharmacokinetics and pharmacodynamics; Survey of major pharmaceutical classes; Uses, mechanisms of action and adverse reactions of selected agents.

**VTPP 427 Biomedical Physiology II Course Objectives:** Continuation of VTPP 423. Fluid balance and acid-base balance; development of an understanding of renal, gastrointestinal, endocrine and reproductive physiology using human and other mammalian models; clinical applications related to organ systems.

**VTPP 489 Bioinformatics Course Objectives:** To review the current high throughput platforms for acquiring genomic signals, e.g. DNA, mRNA, miRNA, and proteins; To learn the work-flow for data processing and analysis; To review the basic approaches for microarray analysis and data modeling from a system biology perspective.

**VTPP 489 Basics in Nano: Experimental and Computational Research Course Objectives:** To provide a broad overview of nanoscience & nanotoxicology from the viewpoint of academic researchers, industrial developers, regulatory agencies, and non-profit environmental groups; To introduce the students to the computational techniques and models relevant to nanomaterials.

**Directed Studies Course Objectives:** Each department offers 285 and 485 courses under its own prefix. 485 courses consist of directed individual research or study with a professor on selected problems in biomedical sciences. Sophomores register for 285 and junior and seniors for 485 courses.

**Research Course Objectives:** Each department and BIMS offers 491 courses under their own prefixes. This course consists of laboratory or field research supervised by a faculty member. In general, a
student may register for a 491 course after having completed a 485 course in the same lab and will write a research paper based on the work.

4.5 Student Advising

To guide BIMS students in their numerous educational choices, the BIMS program provides access to five full-time academic advisors as well as mentorship by the Assistant Dean. Biomedical Science advisors guide registration of students in classes to a great degree. All freshmen are registered by BIMS staff for Fall classes at freshman orientation. Likewise, transfer students are registered by their advisors during their new student conference and orientation. Other BIMS students are required to meet with their advisor twice a year. BIMS advisors see 4600-4700 appointments with students per year. Effective advising by the BIMS staff keeps BIMS students on track towards a timely graduation. BIMS students’ average time to graduation is currently 4.7 years, one of the shortest in the university, even though many BIMS students take extra time for Study Abroad, obtaining a minor, or obtaining a Spanish Certificate. The New Student Conference Handbook is found in Appendix VI and the BIMS Academic Advising Syllabus is in Appendix VII. These documents are provided to BIMS students by their advisors.

4.6 Enrichment Activities

We strive to provide enriching educational opportunities for our students that range from student interest groups to experiential learning, research, an international certificate, and study abroad.

BIMS International Certificate in Cultural Competency and Communication in Spanish (Spanish Certificate): One of the goals of Vision 2020 is to "diversify and globalize the A&M community." Two key indicators in Texas A&M University's Quality Enhancement Plan are specific to creating excellence in diversity for student learning and in internationalization. These two goals are stated as follows:

- Students graduating from Texas A&M University should be able to function successfully in complex, diverse, social, economic, and political contexts.
- Students graduating from Texas A&M University will be able to function effectively in their chosen career fields in an international setting.

The BIMS Spanish Certificate was created to help students achieve cultural competency in a global community. Further details may be found in Appendix VIII. Specifically, students who complete the BIMS Spanish Certificate:

- become functionally bilingual and employ attained language skills in both social and formal settings,
- are able to perform linguistically and in a culturally sensitive manner within the medical and/or agricultural environment,
- gain experiential knowledge abroad, expanding their cultural sensitivities and functionality in a foreign environment.

Biomedical Sciences Association (BSA): BIMS has approximately 450 students involved in the Biomedical Science Association, a student-run student organization. The BSA is the students’ learning community, providing fellowship, leadership and community service. During freshmen orientation students are expressly encouraged to become involved and active in two student organizations, one based on academics, such as BSA, and another non-academic, such as a hometown club or outdoor club.
BSA provides various opportunities to discover and explore the diverse fields and career paths of the BIMS program. BSA officers prepare an outstanding year of activities for members, including meetings, guest speakers, field trips, community service opportunities, and social events. BSA encourages members to become involved with the community by requiring a minimum of 10 community service hours each semester. In the past three years BSA has donated more than 1,500 pounds of food to the Brazos Valley Food Bank. Our members also participate in the Alzheimer’s Walk, Weiner Fest, and Relay for Life each year.

Community Service Opportunities in BSA for the Spring 2011 semester include:
- February 26 - See Spot Run @ Wolf Pen Creek Park 7:30-9:30am /seespotrun
- March 26 - Big Event: http://bigevent.tamu.edu/
- April 9 - Vet School Open House: /openhouse
- Time TBA - Aggie Relay for Life: http://aggierelay.tamu.edu/
- March and April - Adopt A Highway Trash Pickup

Planned Socials for the Spring 2011 semester include:
- January 29 - Broomball @ Arctic Wolf - Time TBA
- February 26 - Baseball Tailgate - Noon at Olsen Pavilion
- March 25 - Movie Social @ 6pm in Room 201
- April 16 - Volleyball @ Student Rec Center 3pm
- April 30 - Hensel Park Picnic and Games 1pm

**Biomedical Science Field Experience:** This course provides on-the-job training in the Biomedical Science industry. Students receive learning and training experiences which are appropriate to their career goals. Professional supervision is required. Students may complete paid or unpaid training/field experiences. The following are typical examples of jobs for which credit may be granted: shadowing a health professional (this should involve some contact with patients in a clinical setting); working as a health professional (employment as an EMT technician or Veterinary technician); and working in biomedical research (employment in a research laboratory). The student receives 2 semester credit hours of BIMS directed elective credit upon completion of the course requirements (S/U grade). If the student is obtaining 485 credit for the field experience, then 484 credit will not be granted. A syllabus for BIMS 484 is included in Appendix IX.

**Directed Studies and Research:** More than 150 BIMS students per year, many of whom are enrolled for two semesters, carry out VIBS/VTPP/VTPB/BIMS 485 and 491 independent study courses in laboratories with faculty providing exposure to undergraduate research. Enrollment of students in 485 and 491 courses has increased with the hiring of new research faculty under the Faculty Reinvestment program. In the Spring 2010, one student participated in a new BIMS 491 Research Writing-Intensive course. In the Spring 2011, there are 11 students participating in this course. Further information regarding the BIMS 485 and 491 courses can be found in Sections 4.4.5 BIMS-Directed Elective Courses and 4.7 Program Assessment.

**Honors Classes.** More than 200 students each semester take honors courses in subjects such as genetics, anatomy, toxicology, and independent study courses. These courses can be taken as honors sections, by honors contract, or, under special permission, as graduate-level courses. Honors students can complete specific curriculum plans (http://honors.tamu.edu.curriculum/Distinctions.shtml) and receive special recognitions at commencement and an Honors designation on their permanent
transcripts. These university level distinctions are in addition to graduation with Latin Honors: *cum laude*, *magna cum laude* and *summa cum laude*.

**MERGE (Mentoring Regents to Success):** As mentioned in Section 2.1, Texas A&M University created the Regents’ Scholar Program in 2003 for first-generation-in-college undergraduates whose total family annual income is less than $40,000. As a member of the program, freshmen are required to live on-campus, participate in a Texas A&M University Success Program, attend a Regents' Scholars Orientation Meeting, and attend the Spring Regents’ Scholars Banquet. In addition to financial support, the program provides them with the academic and social assistance that is vital to the success of a first-generation college student. MERGE is the Regents’ Scholars Program for the BIMS program. All freshmen Regents’ Scholars in BIMS are required to join MERGE during their New Student Conference the summer before their first semester. As members of MERGE, students are required to attend two academic advising sessions during the fall and spring semesters with the BIMS academic advisor who serves as the MERGE coordinator. Members are also required to attend three meetings in the fall semester and two meetings in the spring semester. The required MERGE meetings serve to introduce the new Regents’ Scholars to the College of Veterinary Medicine & Biomedical Sciences. Examples of recent meetings include:

- Lecture and Q&A with Dr. Glen Laine, Institute Director of the Michael E. DeBakey Institute for Comparative Cardiovascular Science and Biomedical Devices
- Tour of the Veterinary Medical Park
- Tour and animal interaction at the Stevenson Companion Animal Life-Care Center
- Lecture and Q&A with Dr. Chris Quick, Associate Professor, Department of Physiology & Pharmacology (a CVM scientist who engages undergraduates in non-invasive circulatory physiology research on the transparent wings of sleeping pallid bats)
- Cloning Lecture and animal interaction with Dr. Duane Kraemer, Professor, Department of Physiology & Pharmacology (the CVM scientist who cloned the first cat, “CC”)

**Study Abroad:** BIMS has a variety of both long- and short-term study abroad opportunities for our students including Mexico, Spain, Italy, Germany, Latin America, the United Kingdom and the Caribbean as primary locations. Trips last from 10 days to 15 weeks depending on the instructor and content of the course. Our objective is to meet the Vision 2020, Imperative #6. Participation is strong, estimated 50 students per year, despite the expense of this global enrichment program.

**4.7 Program Assessment**

**4.7.1 Assessment Measures and Findings**

The Biomedical Sciences program uses multiple avenues and data resources for academic assessment which were described in Section 3.2. The measures and findings for the academic years 2008-09 and 2009-10 are summarized in the next table. Action Plans for improvement are also noted. These action plans were developed in the Fall of 2010 in order to improve our target results in the 2010/2011 academic year.

Information gathered as shown in the table comes from graduation reports run by the Office of the Registrar, through Student Population reports run by the Office of the Registrar, through classroom enrollment data in the Howdy/COMPASS web portal, and through senior surveys. The survey instrument for the December 2010 students is located Appendix X.
<table>
<thead>
<tr>
<th>Achievement Target</th>
<th>‘08/’09</th>
<th>‘09/’10</th>
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<tbody>
<tr>
<td>At least 50% of BIMS graduates will be successful in entering medically-related, professional post-graduate programs</td>
<td>168 of 346 students who graduated from BIMS in the ’07/’08 academic year were in professional school in the Fall 2008. This represents 49% of graduates.</td>
<td>As of the Fall of 2009, 152 of the 325 BIMS graduates (46.8%) were successful in entering medical, dental or veterinary programs. Other graduates were accepted into schools of allied health and graduate school programs, but we were not able to obtain exact counts of the students entering these programs.</td>
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<td>At least 10% of BIMS students will engage in a hypothesis-driven research experience. They will demonstrate their preparedness for Biomedical research opportunities, including graduate school and post-graduate employment, by successfully engaging in authentic undergraduate laboratory research.</td>
<td>196 students have engaged in hypothesis-driven research experiences during the Fall/Spring semesters of academic year 2009, an average of 5.71% of the student population during these semesters. 55 students participated in research during the summer. This included non-BIMS students in the SURP program in VTPP.</td>
<td>174 BIMS students have engaged in hypothesis-driven research experiences. This is 8.2% (134 students) of the average number of students in attendance during the Fall 2009 and Spring 2010 semesters. 10% (40 students) of the students in the summer semesters are completing research.</td>
</tr>
<tr>
<td>The BIMS Program will track graduation rates for Underrepresented Minority (URM) and First Generation (First Gen.) students in the BIMS program. Graduation rates for URM and First Gen. students will be at least 65% of that for non-URM and non-First Gen. students, respectively.</td>
<td>The graduation rate for URM students in the ’08/’09 Academic year was 65.4% that of the non-URM students. Graduation rates for First generation students were not measured until the ’09/’10 academic year.</td>
<td>Graduation rates for underrepresented minorities (Students who identify as Black or Hispanic) were 77.6% of the graduation rates for non-underrepresented minority students. Graduation rates for first generation students were 39.1% of graduation rates for non-first generation students.</td>
</tr>
<tr>
<td>We will measure students’ global awareness by collecting data concerning their multicultural experiences.</td>
<td>This information was not collected for the 2008/2009 academic year through senior surveys. An International Certificate in Cultural Competency and Communication for BIMS majors was awarded to 8 students.</td>
<td>21.03% (45 students) of 214 total graduates in Spring 2010 and Summer 2010 studied/worked/volunteered abroad. (13 of these students completed an International Certificate in Cultural Competency and Communication for BIMS majors.) 35.98% (77 students) of 214 total graduates in Spring and Summer 2010 volunteered for an underserved population domestically. 10.3% (22 students) of 214 total graduates in Spring and Summer 2010 received a minor or a double degree in a foreign language or International Studies.</td>
</tr>
</tbody>
</table>
4.7.2 Plans for Improvement

Increase Our Awareness of Student Careers after Leaving BIMS: The career paths taken by students who graduate from the BIMS program or leave without graduating are often difficult to track, except for those who immediately enter medical, dental, and veterinary schools in the State of Texas. Those who enter the allied health professions and graduate school or become employed with the B.S. as their terminal degree cannot be tracked except by anecdotal information. BIMS advisors administer a survey to graduating seniors from which their immediate plans and aspirations can be documented, but their actual career paths are often unknown. We would like to develop a system to track former students for up to 10 years, which might involve, for example, their providing the names and addresses of 3 individuals likely to know their whereabouts during this time. We would also like to develop an “exit interview” instrument to be given to students who change their majors from BIMS to a second major at Texas A&M University. Through these means, we hope to increase our awareness of student needs and perceptions.

Increase Enrollment in Post-Baccalaureate Education (Graduate and Professional): The BIMS Curriculum Subcommittee is developing several strategies to assess the effectiveness of BIMS education as preparation for graduate education, professional education, and employment. A survey instrument is under beta testing which will be sent to former students, current professors and external stakeholders (such as Deans of Admissions to professional programs). The instrument asks questions regarding the BIMS curriculum, student preparation, student attributes such as collegiality, ethical behaviors and communication skills, and suggestions for improvement. Furthermore, the survey asks questions regarding careers, which would give the BIMS program a more accurate assessment of where our students attend post-graduate schools and to which careers they are driven.

Increase Student Engagement in Undergraduate Research: We would like to increase the number of students participating in independent, undergraduate research projects. This would also increase the number of students completing an honors thesis or thesis through the Honors and Undergraduate Research office. We have several planned ways to achieve this.

At present, our target will remain that 10% of the graduating BIMS population will conduct hypothesis-driven research. As the number of participating students increases, we will reevaluate that target and/or the types of experiences and depth of experience the students receive. Furthermore, the Associate Dean for Undergraduate Programs and the Associate Dean for Research and Graduate Studies will encourage faculty to obtain funding for increased numbers of undergraduates to perform hypothesis-based laboratory research. The BIMS program will continue to advise students on the benefits and rewards of undergraduate research. We will continue to update and maintain the website and poster descriptions of professor research within the college. We will identify professors willing to incorporate a 10-minute student presentation on research during a classroom session. We will have students present their research to a student audience through a mini-symposium, pod-casts on our website, our Regents Scholars program: MERGE, and our student organization, BSA. The BIMS office has also suggested and encouraged student attendance at the Sigma Xi Undergraduate Student-Faculty Research Expo and student participation in Student Research Week.

Another strategy to increase student engagement in research is our recent design of a BIMS 491 Research course that is writing intensive, and thus fulfills one of the W requirements for graduation. As a part of the syllabus, students must present their work and write a significant paper on their research.
This course is meant to be a culmination of an undergraduate research project lasting at least two semesters. A detailed description of this course may be found in Appendix XI.

**Increase Engagement of Students Who Are First Generation:** We will separate the goals/measurement of URM and First Generation student graduation rates. These populations are different, inherently, and they will be measured separately in future years. Furthermore, our new goal for the graduation rate for First Generation students will be 40% of the graduation rate of non-First Generation students. We will reassess and increase percentages as we implement our action plan.

We have a very active Regents’ Scholars program (MERGE) that we would like to build upon, as our population of first generation students is not solely comprised of Regents’ Scholars. We would like to design a program (currently in the discussion phase) where service learning, leadership and academics are emphasized in order to engage both mind and imagination of the students. By doing so, we feel it will increase ownership in the BIMS program and, therefore, potentially increase retention rates.

We also have a very active Biomedical Sciences Association (BSA), as mentioned in Section 4.6 Enrichment Activities, comprised primarily of freshman members which could serve as an avenue for the engagement of first generation students. Approximately half of the freshman class participates in the program, while sophomores, juniors and seniors are often the mentors and officers for the program. The BSA has a medical branch and a veterinary branch, each with its own officers and meeting plans. Students are required to participate in 10 hours of community service per semester, one social event/meeting and three regularly scheduled meetings in order to be active. New social and volunteer activities are developed each semester by the officers and the BIMS advisor to the student program. Continuous discussions center on increasing student participation, engagement in their community and mentorship.

**Encourage study/work abroad:** While our goals for students participating in study and work abroad were met, we will continue to encourage these activities and to facilitate the development of BIMS-specific programs abroad. The VTPP Department is currently developing a semester abroad in Germany. Students would take the second half of Biochemistry, Immunology, Biomedical Genetics, A History of Human Medicine in Europe and an independent study credit while abroad. It is designed for second-semester juniors. Similarly, we will be meeting in February with individuals in the Study Abroad and Honors and Undergraduate Research Office regarding a study abroad in Newcastle. Similar parameters will be suggested for the curriculum and targeted BIMS student.

Additionally, we are discussing new ways for students to volunteer in underserved populations domestically. Students who complete the Spanish Certificate are required not only to study abroad in a Spanish-speaking country, but to shadow for a total of 90 hours in the Biomedical environment (at least 3/4 of the hours should be actively using the Spanish language). We are looking for avenues to expand the locations that allow undergraduates to shadow and opportunities for students to participate in field research in underserved areas within the state of Texas.
5. BIOMEDICAL SCIENCES STUDENTS

5.1 Student Profile

5.1.1 Texas A&M University: Texas A&M University is a Research I University with more than $544 million spent annually on research (National Science Foundation, 2008). The university offers 150 courses of study for baccalaureate through doctoral degrees in 10 colleges and schools. It ranks first among Texas public institutions in student retention and graduation rates. Enrollment (12th Class Day Head Counts) in Fall 2010 was 48,129 students, of whom 38,148 were undergraduates; 10,175 of the undergraduates were first-generation students. Texas A&M University enrolled 8176 new freshmen in Fall 2010; their ethnicity included students who identified themselves as Hispanic (18.4%), Black or 2 or more races including Black (3.3%), and American Indian (0.05%). These categories reflect the new classification system for race and ethnicity put in place in Fall 2010. Texas A&M University enrolled 1665 first-time transfer students in Fall 2010, including students who identified themselves as Hispanic (13%), Black or 2 of more races including Black (2.0%), and American Indian (0.3%).

Texas A&M University has demonstrated the ability to increase access to education by removing barriers to degree completion. The Texas Higher Education Coordinating Board (THECB) reports that, statewide, only 10% of all new under-prepared students who took developmental courses gained college-readiness in their first year, but 46% of these students gained college-readiness in their first year at Texas A&M University. Texas A&M University is also a leader in helping under-prepared students complete their degree. While only 20% of under-prepared students gained their degree within 6 years statewide, 82% of these students graduated from Texas A&M University within 6 years. Texas A&M University is deeply committed to fulfilling the goals of the “Closing the Gaps” Texas Higher Education Plan.

For the past several years, Texas A&M University has received high national rankings by The Hispanic Outlook in Higher Education for the number of Hispanic students earning degrees and for the number of Hispanic students enrolled. In 2009, Texas A&M University was ranked 20th in number of bachelor’s degrees granted to Hispanics. In the granting of bachelor’s degrees in biological and biomedical sciences, Texas A&M University was ranked still higher at 7th nationally. Texas A&M University has been included in the magazine’s top 25 universities for Hispanic students for six consecutive years, based on the above factors, as well as faculty-student ratio, academic excellence, and cultural programs, organizations, and support for Hispanic students. Texas A&M University has a formal Diversity Plan, which can be viewed at http://diversity.tamu.edu/plan/index.asp.

An intangible incentive that Texas A&M University can provide is to facilitate becoming “an Aggie.” The TAMU culture attracts young people because it is a new family—a home away from home—that lasts a lifetime. Moreover, an education at Texas A&M University is an outstanding value. Smart Money Magazine, a Wall Street Journal publication, rates Texas A&M University #1 in value, saying, “...who would've guessed that Texas A&M, No. 1 in our survey, would deliver a payback more than two and a half times that of Harvard?” (December 16, 2008, SmartMoney Magazine). The rating was determined by calculating a “payback ratio,” the earnings levels of an institution’s graduates compared to what they paid in tuition, fees and related costs for their undergraduate educations.

5.1.2 Biomedical Sciences Program: The B.S. degree program in Biomedical Sciences contributes significantly to overall student quality and diversity at Texas A&M University. The tables on the next page show 12th Class Day student profile data for Fall semesters 2009 and 2010, both TOTAL STUDENT
COUNTS and FIRST TIME IN COLLEGE STUDENT COUNTS. The BIMS student population includes a higher percentage of underrepresented minority students than does the Texas A&M undergraduate student body as a whole. Also, while first generation students make up 28% of the entering BIMS class, they make up only 21% of the total BIMS undergraduate population because they leave the major disproportionately. The percentage of students who were in the top 10% of their high school graduating class is about 65%, compared to less than 50% for Texas A&M University as a whole.

<table>
<thead>
<tr>
<th>TOTAL STUDENT COUNT</th>
<th>TAMU Fall 2009</th>
<th>BIMS Fall 2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total undergraduates</td>
<td>38,809</td>
<td>1739</td>
</tr>
<tr>
<td>First generation undergraduates (%)</td>
<td>10,044 (25.8%)</td>
<td>462 (26.6%)</td>
</tr>
<tr>
<td>URM* Undergraduates (%)</td>
<td>7098 (18.3%)</td>
<td>394 (22.7%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>FIRST TIME IN COLLEGE STUDENTS</th>
<th>TAMU Fall 2009</th>
<th>BIMS Fall 2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>All undergraduates</td>
<td>8071</td>
<td>674</td>
</tr>
<tr>
<td>First generation undergraduates (%)</td>
<td>2162 (26.8%)</td>
<td>216 (32.0%)</td>
</tr>
<tr>
<td>URM* (%)</td>
<td>7098 (18.3%)</td>
<td>171 (25.4%)</td>
</tr>
<tr>
<td>Top 10% of High School (%)</td>
<td>3932 (48.7%)</td>
<td>441 (65.4%)</td>
</tr>
</tbody>
</table>

*Underrepresented minority: Hispanic, African American (or Black and 2 or more races with Black), or Native American (American Indian). Does not include Asian, International, Other, or Unknown.

The stated goals of the BIMS program since 1996 have been to maintain and continue to improve the academic experience, to prepare students for their career objectives in the biomedical sciences, and to increase student diversity. The goal of increasing student diversity addresses a significant need within the State of Texas, a majority-minority state where Whites are not a majority, to have an educated population in the coming decades.

Since 2000, the BIMS program has implemented new strategies to increase minority enrollment, including the redefinition of target high schools for recruitment and the formation of 2+2 articulation agreements with community colleges that have at least 20% minority enrollment. These activities are described in Section 4.1 Student Recruitment. Through an extensive program of annual high school recruitment visitations, non-White enrollment in the BIMS program exceeds that of the university as a whole (see table below), and most of the non-White students in BIMS identify themselves as Hispanic. Nevertheless, student demographics in BIMS still do not reflect Texas’ demographics (50.8% non-White) (2000 Census, U.S. Bureau of the Census) and more progress is needed. At the same time, the cumulative GPR has consistently remained higher than that of the university (see next table, BIMS NON-WHITE STUDENT COUNT AND GPR), which indicates that student quality remains high as the minority population increases.
The 2+2 articulation agreements contain tailored provisions and conditions for each partnering community college for the seamless transition of students into BIMS after they have completed their associate’s degree. The agreements provide for guaranteed admission to BIMS of qualified students and academic transfer of their courses into the BIMS curriculum. Students must meet general admission requirements for Texas A&M University (i.e., transcripts, applications, timelines, and deadline dates), must have ≥ 3.00 GPR in prescribed courses (preferably ≥ 3.60 GPR), and must have a B or better grade in all Common Body of Knowledge (CBK) science and math courses. The community colleges with which we partner were listed in Section 4.1 Student Recruitment. In the first 9 years of 2+2 implementation, participation by community college students has been promising. Currently, 200 students are taking the 2+2 course of study for BIMS at the community colleges or have matriculated into BIMS by this pathway. Anecdotal information from 2+2 students who have remained in contact with the BIMS office indicates that many students have gone on to post-graduate education, primarily into physician assistant programs and pharmacy school. Others have entered medical school, veterinary school, or graduate school.

5.2 Student Six Year Graduation Rate

The Biomedical Sciences program has been reasonably successful at retaining students until graduation, though we lose about 30% of freshmen by the time they have completed 55 hours, usually because they have not fulfilled GPR requirements for upper division classes. The six year graduation rate for the Biomedical Sciences program is compared in the following chart to the rates for similar majors at Texas A&M University, Biology, Chemistry, and Genetics, and for all majors. The data show students graduating within six years with the same major they chose as First-Time in College Students at Texas A&M University.
5.3 Student Acceptance into Professional Schools

Biomedical Sciences students have had high rates of acceptance into Texas medical schools, Texas dental schools and the Texas A&M College of Veterinary Medicine & Biomedical Sciences, according to data provided by the Texas A&M Office of Professional School Advising and the CVM. The most recent available data are shown below. Data are not available for allied health schools, other professional schools or graduate programs that BIMS students also enter. However, we estimate from student surveys at graduation that about 10% of BIMS graduates go to graduate school.

<table>
<thead>
<tr>
<th>ADMISSION OF BIMS STUDENTS INTO TEXAS MEDICAL, DENTAL, AND VETERINARY SCHOOLS</th>
<th>% of Aggies</th>
<th>% of Texans</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical (2009)</td>
<td>114/371 (30.7%)</td>
<td>114/1200 (9.5%)</td>
</tr>
<tr>
<td>Dental (2009)</td>
<td>30/82 (36.5%)</td>
<td>30/180 (16.7%)</td>
</tr>
<tr>
<td>Veterinary (2009)</td>
<td>39/77 (50.6%)</td>
<td>39/124 (31.4%)</td>
</tr>
</tbody>
</table>

5.5 Student Honors and Recognitions

Biomedical Sciences students have earned numerous honors at the college, university, and national levels. Many of these honors are listed in Appendix XII. In addition, a large percentage of BIMS students also graduate with Latin honors based on GPR: *summa cum laude*: (3.90 – 4.00), *magna cum laude* (3.70 – 3.899), and *cum laude* (3.50 – 3.699). The table below shows BIMS graduates receiving Latin honors in Fall 2009, Spring 2010, and Summer 2010, together with their ethnicity. In FY2010, 41.7% of BIMS graduates earned Latin honors.

<table>
<thead>
<tr>
<th>BIMS STUDENTS GRADUATING WITH LATIN HONORS IN FY2010</th>
<th>Fall 2009</th>
<th>Spring 2010</th>
<th>Summer 2010</th>
<th>Total for Academic Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total BIMS Graduates</td>
<td>61</td>
<td>176</td>
<td>34</td>
<td>271</td>
</tr>
<tr>
<td>Summa Cum Laude</td>
<td>6 (2)</td>
<td>31 (9)</td>
<td>4 (1)</td>
<td>41</td>
</tr>
<tr>
<td>Magna Cum Laude</td>
<td>7 (1)</td>
<td>19 (6)</td>
<td>1</td>
<td>27</td>
</tr>
<tr>
<td>Cum Laude</td>
<td>11 (4)</td>
<td>33 (9)</td>
<td>1 (1)</td>
<td>45</td>
</tr>
</tbody>
</table>

Number in parentheses indicates Non-White

6. BIOMEDICAL SCIENCES FACULTY

6.1 Faculty Profile and Courses Taught Last 5 Years

The College of Veterinary Medicine & Biomedical Sciences has approximately 225 faculty members, 60 of whom teach in the undergraduate curriculum. The table in Appendix XIII lists names of CVM faculty who teach didactic courses in the BIMS curriculum, together with their academic rank, degrees, and courses. Most of these faculty members also mentor undergraduate students in 285 and 485 Directed Studies and 491 Research courses, in addition to teaching didactic courses, as denoted by an asterisk. Appendix XIII also includes a current listing of BIMS faculty mentors for 285/485 and 491 courses that is distributed to BIMS students. Curricula vitae for faculty members are provided in Appendix I.
The faculty teach 34 different didactic courses under the prefixes of BIMS, GENE (Genetics), VIBS (Veterinary Integrative Biosciences), VTPB (Veterinary Pathobiology), and VTPP (Veterinary Physiology and Pharmacology). In addition, faculty members from all five departments teach 285, 485, and 491 courses. Reports showing the history of course taught for each semester since Fall 2005 were compiled by the Office Faculty of Institutional Studies and Planning. The data tables are located in Appendix XIV. Course numbers of 600 or higher are graduate courses. Most courses with the GENE prefixes are not taught by BIMS faculty, except for GENE 320, GENE 405, and GENE 421. Faculty to student ratios in BIMS courses are usually less than 1:60, with many between 1:15 and 1:55, as shown in Appendix XV.

6.2 Faculty Reinvestment and the Biomedical Sciences Program

Overall, the College of Veterinary Medicine & Biomedical Sciences gained 37 positions under the faculty reinvestment plan and many of those have impacted the Program in Biomedical Sciences. Faculty

<table>
<thead>
<tr>
<th>Name</th>
<th>Rank at Hire</th>
<th>Dept</th>
<th>Start Date</th>
<th>Sig Prog Area</th>
<th>Sex</th>
<th>Ethnicity</th>
<th>Country of Origin</th>
<th>Teaching in BIMS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Logan, L</td>
<td>Cl Prof</td>
<td>VTPB</td>
<td>09/04</td>
<td>Em Infec Dis</td>
<td>F</td>
<td>White</td>
<td>USA</td>
<td>Department Head of VTPB</td>
</tr>
<tr>
<td>Ko, G</td>
<td>Asst Prof</td>
<td>VIBS</td>
<td>09/04</td>
<td>Neurosci</td>
<td>F</td>
<td>Asian</td>
<td>Taiwan</td>
<td>VIBS 450 Neurology</td>
</tr>
<tr>
<td>Murphy, W</td>
<td>Asso Prof</td>
<td>VIBS</td>
<td>09/04</td>
<td>Genomics</td>
<td>M</td>
<td>White</td>
<td>USA</td>
<td>BIMS 320 Genetics</td>
</tr>
<tr>
<td>Heaps, C</td>
<td>Asst Prof</td>
<td>VTPP</td>
<td>10/04</td>
<td>Cardiovas Sci</td>
<td>F</td>
<td>White</td>
<td>USA</td>
<td>BIMS 101</td>
</tr>
<tr>
<td>Scott, M</td>
<td>Cl Asst Prof</td>
<td>VTPP</td>
<td>01/05</td>
<td>Toxicology</td>
<td>F</td>
<td>Black</td>
<td>USA</td>
<td>VTPP 425</td>
</tr>
<tr>
<td>Arosh, J</td>
<td>Asst Prof</td>
<td>VIBS</td>
<td>12/04</td>
<td>Repro Biol</td>
<td>M</td>
<td>Asian</td>
<td>India</td>
<td>VIBS 489 Neuroendocrinology</td>
</tr>
<tr>
<td>Mwangi, W</td>
<td>Asst Prof</td>
<td>VTPB</td>
<td>07/05</td>
<td>Em Infec Dis</td>
<td>M</td>
<td>Black</td>
<td>Kenya</td>
<td>VTPB 409 Introduction to Immunology</td>
</tr>
<tr>
<td>Ivanov, I</td>
<td>Asst Prof</td>
<td>VTPP</td>
<td>09/05</td>
<td>Toxicology</td>
<td>M</td>
<td>White</td>
<td>Bulgaria</td>
<td>VTPP 489 Bioinformatics</td>
</tr>
<tr>
<td>Samollow, P</td>
<td>Prof</td>
<td>VIBS</td>
<td>09/05</td>
<td>Genomics</td>
<td>M</td>
<td>White</td>
<td>USA</td>
<td>BIMS 320 Genetics</td>
</tr>
<tr>
<td>Raudsepp,T</td>
<td>Asst Prof</td>
<td>VIBS</td>
<td>09/05</td>
<td>Genomics</td>
<td>F</td>
<td>White</td>
<td>Estonia</td>
<td>BIMS 320 Genetics</td>
</tr>
<tr>
<td>Cothran, E</td>
<td>Cl Prof</td>
<td>VIBS</td>
<td>04/06</td>
<td>Genomics</td>
<td>M</td>
<td>White</td>
<td>USA</td>
<td>BIMS 320 Genetics</td>
</tr>
<tr>
<td>Sayes, C</td>
<td>Asst Prof</td>
<td>VTPP</td>
<td>01/08</td>
<td>Toxicology</td>
<td>F</td>
<td>White</td>
<td>USA</td>
<td>VTPP Basics in Nano: Experimen &amp; Comput Research</td>
</tr>
</tbody>
</table>
reinvestment benefitted students in the CVM in many ways, as new faculty were hired in clinical departments as well as basic science departments to advance the missions of Texas A&M University and the CVM in teaching, research, service, and patient care. The faculty members hired have also brought greater diversity to the college faculty. Of 34 hired, 16 are female, 2 are Hispanic, 5 are Asian, 3 are Black, and 13 are international.

Of the 34 faculty members hired under the reinvestment program, 11 are now lead instructors for undergraduate courses in the BIMS program. Four teach the required foundation course BIMS 320 Biomedical Genetics, and their addition to the faculty has allowed us to offer more and smaller sections of the class, which is taught year-round. These new genetics faculty are also superb researchers and bring the excitement of new discovery to the classroom. Three of the new faculty members have created new courses in neuroendocrinology, bioinformatics, and nanoscience research that serve as electives for BIMS students. The faculty hired under the reinvestment program who teach in the BIMS program are listed in the preceding table CVM FACULTY REINVESTMENT POSITIONS, together with their title at hire, department, CVM Signature Program area, ethnicity, country of origin, and course taught. Dr. Linda Logan, who was the first faculty member hired under the reinvestment program, temporarily left the CVM and then returned in 2009 as department head of Veterinary Pathobiology.

### 6.3 Faculty Honors and Recognitions

Members of the BIMS faculty have been recipients of multiple honors ranging from college and university level teaching awards to national awards. Major awards BIMS faculty have received in the last 10 years are listed in the next table.

<table>
<thead>
<tr>
<th>NAME</th>
<th>TITLE</th>
<th>HONOR/RECOGNITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Louise Abbott, Ph.D.</td>
<td>Associate Professor, VIBS</td>
<td>Association of Former Students Distinguished Teaching Award (University Level), 2010 Pfizer Carl J. Norden Award for Teaching (College Level), 2010</td>
</tr>
<tr>
<td>Gerald Bratton, D.V.M.</td>
<td>Senior Professor, VIBS</td>
<td>Association of Former Students Distinguished Teaching Award (University Level), 2003</td>
</tr>
<tr>
<td>Bhanu Chowdhary, D.V.M., Ph.D.</td>
<td>Professor, VIBS</td>
<td>Association of Former Students Distinguished Research Award (University Level), 2006</td>
</tr>
<tr>
<td>Tom Ficht, Ph.D.</td>
<td>Professor, VTPB</td>
<td>Sigma Xi International Research Society Award, Texas A&amp;M Chapter Level, Distinguished Scientist, 2004</td>
</tr>
<tr>
<td>Barbara Gastel, M.D., M.P.H.</td>
<td>Professor, VIBS</td>
<td>Sigma Xi International Research Society Award, Texas A&amp;M Chapter Level, Outstanding Texas A&amp;M Science Communicator, 2003 Sigma Xi International Research Society Awards, International Level, 2010 John P. McGovern Science and Society Award; past winners include Condolezza Rice and Nobelist Norman E. Borlaug, 2010</td>
</tr>
<tr>
<td>James Herman, D.V.M., Ph.D.</td>
<td>Clinical Associate Professor, VTPP</td>
<td>Montague Center for Teaching Excellence Scholar Award, 2004-05 Association of Former Students, Distinguished Teaching Award (University Level), 2008</td>
</tr>
<tr>
<td>Name</td>
<td>Title</td>
<td>Awards</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>------------------------</td>
<td>------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Anton Hoffman, D.V.M., Ph.D.</td>
<td>Clinical Assistant Professor, VIBS</td>
<td>Association of Former Students, Distinguished Teaching Award (University Level), 2007</td>
</tr>
<tr>
<td>Jon Hunter, D.V.M., Ph.D.</td>
<td>Professor, VTPP</td>
<td>Association of Former Students, Distinguished Teaching Award (University Level), 2006</td>
</tr>
<tr>
<td>Larry Johnson, Ph.D.</td>
<td>Professor, VIBS</td>
<td>Sigma Xi International Research Society Award, Texas A&amp;M Chapter Level, Outstanding Texas A&amp;M Science Communicator 2001 Association of Former Students, Distinguished Service in Continuing Education, Outreach and Extension Award (University Level), 2007 Bush Excellence Award Public Service, 2009</td>
</tr>
<tr>
<td>Gladys Ko, Ph.D.</td>
<td>Associate Professor, VIBS</td>
<td>Montague Center for Teaching Excellence Scholar Award, 2007-08</td>
</tr>
<tr>
<td>William Murphy, Ph.D.</td>
<td>Associate Professor, VIBS</td>
<td>JoAnne Treat Award for Research, 2009 Association of Former Students, Distinguished Research Award (University Level), 2010</td>
</tr>
<tr>
<td>Jeffrey Musser, D.V.M., Ph.D.</td>
<td>Clinical Associate Professor, VTPB</td>
<td>Montague Center for Teaching Excellence Scholar Award, 2003-04</td>
</tr>
<tr>
<td>Timothy Phillips, Ph.D.</td>
<td>Professor, VIBS</td>
<td>Sigma Xi International Research Society Award, Texas A&amp;M Chapter Level, Distinguished Scientist, 2003 Bush Excellence Award for International Research, 2005 Association of Former Students, Distinguished Research Award (University Level), 2006 Sigma Xi International Research Society Walston Chubb Award for Innovation (International Level), 2009</td>
</tr>
<tr>
<td>Terje Raudsepp, Ph.D.</td>
<td>Assistant Professor, VIBS</td>
<td>Montague Center for Teaching Excellence Scholar Award, 2010-11</td>
</tr>
<tr>
<td>Karen Russell, D.V.M., Ph.D.</td>
<td>Associate Professor, VTPB</td>
<td>Montague Center for Teaching Excellence Scholar Award, 2001-02</td>
</tr>
<tr>
<td>Ralph Storts, D.V.M., Ph.D.</td>
<td>Professor, VTPB</td>
<td>Association of Former Students, Distinguished Teaching Award (University Level), 2004</td>
</tr>
<tr>
<td>Gerald Gale Wagner, Ph.D.</td>
<td>Professor, VTPB</td>
<td>Bush Excellence Award for International Teaching, 2008</td>
</tr>
<tr>
<td>James Womack, D.V.M., Ph.D.</td>
<td>Distinguished Professor, VTPB</td>
<td>Membership in the National Academy of Sciences, U.S.A. since 1999 Bush Excellence Award for International Research, 2008 Association of Former Students, Distinguished Graduate Mentoring Award (University Level, 1/year) 2010</td>
</tr>
</tbody>
</table>

Notes:
1. The numbers of University Level Association of Former Students Awards given per year are: Teaching – 9, Research– 6, Outreach–1, Graduate Mentoring–1.
2. One Montague Center for Teaching Excellence Scholar Award is given per college each year.
3. The JoAnne Treat Award for Research is given at the System level, 1/year since 2003 alternating each year between a senior investigator and a young investigator.
4. Bush Excellence Awards for International Teaching, Research, and Public Service were instituted at the System level in 2002. One is given in each category per year.
Additionally, some faculty members have been honored with endowed chairs or have been designated distinguished professors. These faculty members are listed below.

<table>
<thead>
<tr>
<th>NAME</th>
<th>TITLE</th>
<th>HONOR/RECOGNITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Katrin Hinrichs, D.V.M., Ph.D.</td>
<td>Professor, VTPP</td>
<td>Endowed Chair - Patsy Link Chair in Mare Reproductive Studies</td>
</tr>
<tr>
<td>Glen Laine, Ph.D.</td>
<td>Professor, VTPP</td>
<td>Wiseman, Lewie, and Worth Chair in Cardiology</td>
</tr>
<tr>
<td>Timothy Phillips, Ph.D.</td>
<td>Professor, VIBS</td>
<td>Chester Reed Chair in Toxicology (appointment in progress)</td>
</tr>
<tr>
<td>Ian Tizard, D.V.M., Ph.D.</td>
<td>Professor, VTPB</td>
<td>Richard M. Shubot Professorship in Avian Health</td>
</tr>
<tr>
<td>James Womack, D.V.M., Ph.D.</td>
<td>Distinguished Professor, VTPB</td>
<td>W.P. and Bulah Luse Endowed Professorship in Veterinary Medicine</td>
</tr>
</tbody>
</table>

7. BIOMEDICAL SCIENCES FACILITIES AND RESOURCES

7.1 Classrooms and Laboratories

The Biomedical Sciences undergraduate program is housed in the College of Veterinary Medicine & Biomedical Sciences. Nearly all upper level courses are taught by CVM faculty in the same facilities used for teaching the professional veterinary school curriculum. Thus, for example, anatomy is taught by D.V.M./Ph.D. instructors with dog cadavers, plastinated models, and computer-aided learning tools prepared on site. The gross anatomy laboratory is equipped with facilities for the dissection of domestic animal species, including dog, horse, and goat. The histology teaching laboratory is equipped with high-quality dual headed microscopes sufficient for teaching classes of 65 at a time. The microbiology and physiology laboratories are likewise well equipped. In addition, BIMS students who choose to take a 485 Directed Studies course or 491 Research course mentored by a faculty member carry out their work in well-equipped research laboratories. Facilities of the college are described in Section 3 of the Self Study submitted in 2008 to the American Veterinary Medical Association for accreditation review. This description is located in Appendix XVI.

It should be noted that the Texas Higher Education Coordinating Board has recommended a significant increase in class size in the D.V.M. program to address the shortage of veterinarians in the state and nation. With potential increases in the size of the D.V.M. program, additional large classrooms capable of seating an entire class will be needed. This need would necessitate construction of a new facility, as there is insufficient space within existing facilities that could be remodeled for such. A new education building would also benefit the BIMS program, either through direct availability of the space to BIMS students or increased availability of existing space to BIMS students because it would no longer be shared with the D.V.M. students.

7.2 Library Facilities and Support

As one of the libraries in the Texas A&M University Libraries umbrella, the Medical Sciences Library has a wealth of information resources to offer to Biomedical Sciences students. We are one of the largest veterinary medical libraries in North America, both in terms of information resources available and the size of our staff. Our resources are greatly enhanced and enriched beyond the typical veterinary library
because we also serve the Texas A&M Health Science Center. The following detailed highlights provide a clear representation of the resources available:

- Nearly 129,500 print volumes
- Over 43,000 print monograph (book) titles
- Nearly 950,000 full text electronic books, including a recent license for all electronic books with CAB (Commonwealth Agricultural Bureau) imprints
- Over 101,000 full text electronic journal titles
- Over 1,200 electronic databases, including these of special interest to veterinary medicine
  - MEDLINE back to 1950
  - CAB Abstracts—current and archive files back to 1910
  - BIOSIS back to 1926
  - Zoological Record back to 1864
  - Agricola back to 1970
- Remote access to growing complement of electronic resources
- Library website which brings library resources and services to the user
- Electronic delivery of articles and interlibrary loan services at no charge
- Information and reference services available in person, by phone, email and over the Internet
- Educational programs and online tutorials in use of information resources
- Specific information management skills in the use of information for clinical support, such as the clinical veterinary librarian program

Physical Space and Infrastructure
- Library facility that is open 119 hours each week
- Computer Lab Education Center (accommodates up to 40 students) where information management skills are taught and standard commercial productivity software is provided
- Public Computers (68) for accessing information resources
- Individual study carrels (29)
- Group study rooms (12)
- Presentation Practice Room
- Wireless access throughout
- Laptop computers, Kindles and iPads which can be checked out by users

7.3 University Resources

Excellent services for student learning and personal development are available at Texas A&M University, including those described below:

Student Learning Center (SLC): The SLC provides services that promote retention and success, including Supplemental Instruction (SI) and SLC peer tutors. The SI program provides regularly scheduled, out-of-class, peer-facilitated group study sessions for traditionally difficult core curriculum courses. SI leaders are undergraduate students who have a high GPR, good interpersonal communication skills, and course competency. SI supervisors train SI leaders, oversee and guide their activities and presentations, and cooperate with faculty in selecting candidates for SI leaders. SLC tutors are undergraduates with high academic qualifications who are trained in learning strategies and study techniques that can help students achieve greater academic success. Students are matched with tutors specializing in their area
of study. Tutors can help pinpoint problem areas in difficult courses and/or direct students to other available resources.

**Undergraduate Research Support Activities:** Students can enhance their research and academic experiences through many resources provided by the university. Programs include: 1) Honors Programs 2) Undergraduate Research Travel and Presentation Grants, 3) Undergraduate Research Scholars Program, 4) NSF Research Experiences for Undergraduates (REU) Sites, of which Texas A&M University currently has 16, including *Mechanobiology of the Bat Wing Microvasculature* in the College of Veterinary Medicine, 5) Summer Scholars Program, 6) Undergraduate Research Scholars Writing Class (online instruction provided by the Office of Honors and Undergraduate Research), and 7) Student Research Week, which provides a supportive environment in which undergraduate and graduate students from all disciplines may present their research in oral or poster format. In its 14th year, Student Research Week is one of the largest student-led research week programs in the nation.

**Student Counseling Service (SCS):** The SCS provides a full range of professional services, including personal and career counseling, academic skills enhancement, testing, outreach programming, psychiatric services, consultation, and crisis intervention. Also provided are specialized services such as biofeedback training, couple and human sexuality counseling, alcohol and substance counseling, and services for minority, international, and disabled students. Career Counseling & Testing Services promote student development and self-knowledge through education in order to help students make appropriate and satisfying career choices. Services are designed for students in the initial stages of career exploration and choosing a major. A variety of programs are provided to assist in the career choice process, including individual and group counseling; assessment of interests, values, and personality characteristics relevant to career planning; workshops; and an extensive collection of self-help resources. Additionally, Programs for Academic Success Skills (PASS) provide students with an opportunity to develop knowledge, skills, and attitudes that will enhance study and exam-taking ability, while decreasing anxiety related to academic performance. Services include individual and group counseling, assessment of study behaviors, screening for learning disabilities, an extensive collection of self-help resources, and weekly workshops on a variety of study skills topics.

**Career Center:** The Career Center offers services that address the particular needs of undergraduate students. These services include workshops on independent job searches, internships and co-operative education, resume/cover letter writing, and interviewing skills.

**University Writing Center:** The Writing Center offers free one-on-one consultations for undergraduates to obtain help on written assignments, on-line resources, and classroom workshops. Topics taught include Components of the Writing Process, Grammar and Punctuation, Citing and Documenting Sources and Avoiding Plagiarism, among others.

**8. BIOMEDICAL SCIENCES STRATEGIC PLANNING**

The College of Veterinary Medicine & Biomedical Sciences is currently in the process of developing a new strategic plan. The following are summaries of the strengths, weaknesses, and challenges that have come out of this planning process to date. Our strategic plan will help us meet the goals and objectives of Section 3.2 Mission, Goals, and Objectives noted earlier in the document.
8.1 Programmatic Strengths

8.1.1 Faculty Expertise and Dedication

The quality and achievements of the Biomedical Sciences program are founded on the support and contributions of an excellent faculty. Faculty members who teach in the BIMS program are highly accomplished and have won many prestigious awards in teaching, research, and service, as evidenced in Section 6.3 Faculty Honors and Recognitions. Furthermore, many senior faculty in the CVM place their career emphasis on undergraduate teaching, and indeed all BIMS courses and laboratories in the CVM are taught by faculty rather than graduate students, and most by tenured or tenure-track faculty. Because of the willingness of faculty to offer multiple classes and sections, faculty to student ratios are largely less than 1:60, with many between 1:15 and 1:55 (Appendix XV). Furthermore, as shown in the attached curricula vitae (Appendix I), a large number of BIMS faculty also have clinical training or participate in the professional curriculum, which enhances the clinical relevance they can impart to students in their courses. Another large group of faculty has very successful research laboratories, which, again, enhance the relevance of the concepts imparted in the classroom.

8.1.2 Staff Expertise and Dedication

The BIMS program also enjoys an unusually well-trained, dedicated professional staff. Of the 6 professional staff members in BIMS, including the Assistant Dean, 3 hold Ph.D. degrees, including two in biomedical sciences research areas, and 2 others hold M.S. degrees. Further information regarding the staff of BIMS can be found in Section 2.3.2 Professional Staff.

8.1.3 Curriculum and Facilities

The BIMS curriculum has the highest number of upper division science hours among the major life science degrees at Texas A&M University. The four core upper division BIMS courses (Anatomy, Genetics, Microbiology, and Physiology) are comprehensive and rigorous and appear to prepare students well for professional programs. Also required are 22-24 BIMS Directed electives, many of which are 300 and 400 (junior and senior) level courses. Several have advanced laboratories. The laboratory portions of BIMS courses taught in the CVM are held in the same facilities used to teach veterinary students, which further strengthens the impact of the courses taught.

BIMS enjoys a very positive reputation for quality of its graduates among admissions officials in Texas medical schools and allied health programs. This is evidenced by the large numbers of BIMS students accepted into professional schools each year. Data have been presented in Section 5.3 Student Acceptance into Professional Schools.

The curriculum also allows for students to participate in numerous enrichment activities, such as research over several semesters, study abroad, and earning of a Spanish Certificate. In addition, the elective hours available allow students to track in an area of particular interest, if desired. Students may also pursue a minor in neuroscience, psychology, business, or other areas. Thus, the BIMS program graduates students who are well-rounded academically, who are involved in their local communities and who are globally aware.
For students who are interested, the BIMS program has facilitated agreements with both Texas Chiropractic College and the School of Rural Public Health/TAMHSC. These agreements facilitate the seamless transition of students into graduate/professional programs.

8.1.4 Quality and Diversity of Students

The BIMS program has academically talented students. Through visitation to 250 high schools yearly, the program attracts students who are in the top 10% of their graduating class and who have an average of 13 hours of college credit at matriculation.

The BIMS program successfully recruits under-represented minorities and first generation students. Towards this end, the BIMS program has 13 articulation agreements with targeted community colleges. These colleges have student populations that are ethnically, socioeconomically and geographically diverse. The BIMS program hosts 2+2 Day for students from these 13 colleges where they are exposed to leaders from the College of Medicine, the College of Nursing and the College of Veterinary Medicine & Biomedical Sciences, as well as individuals from admissions.

8.1.5 Unique History and Interdepartmental Structure

The BIMS program is an example of a highly successful interdepartmental degree program. Many other interdisciplinary degree programs struggle in some way at this university. Many factors contribute to the success of BIMS. For example, it is the only undergraduate degree program in the CVM, and therefore does not compete with other departmental programs in the college. Also, the CVM faculty are genuinely interested in preparing high quality pools of students for entry into not only the professional D.V.M. program, but also other professional programs and graduate school. Furthermore, the faculty recognize that through the BIMS program they have a strong connection with undergraduate education across campus, a situation unique to this college of veterinary medicine.

8.2 Programmatic Weaknesses

8.2.1 Focus on Pre-Professional Education

The BIMS program has a strong reputation for successfully preparing students for acceptance into professional schools, but is not widely known for its equal ability to prepare students for Ph.D. programs. Should BIMS continue to focus primarily on recruiting and preparing pre-professional students, or should we expand our portfolio to foster preparation for Ph.D. programs? Do other programs already fill this need, such as the B.S. degree programs in Biochemistry, Genetics, and Biology? Do we have more students than we know that are in graduate programs? There is a lack of data on students and where they are 1, 2 and 5 years after graduation.

8.2.2 Lack of Dedicated Scholarships

Though the College of Veterinary Medicine & Biomedical Sciences has 146 Endowed Scholarships, totaling $13,440,338, only 2 are endowed for undergraduate students. Most of these funds are awarded to veterinary students, in part because of the much greater cost of education for a D.V.M. degree than for a B.S. degree, and in part because of the desires of donors. Therefore, there is a lack of scholarship funding for BIMS students when compared to other colleges at Texas A&M University.
There are, however, development opportunities for increasing the numbers of donors for undergraduate scholarships in the CVM.

A second weakness is that scholarships for transfer students are often not available at the university level and are not available for students to apply for until the senior year in BIMS.

8.3. Programmatic Challenges

8.3.1 Preparing Students for Varied Careers: The BIMS program strives to prepare students for numerous career objectives in applied biology, including preparation for graduate school, professional schools, and immediate employment.

Problem: Assessment of progress towards this goal is based on anecdotal information. Our perception is that students interested in graduate school and research careers pursue majors other than BIMS because they view BIMS as a pre-professional program.

Efforts: The BIMS faculty and staff will continue to query graduating seniors regarding their plans after graduation and develop follow-up surveys, if possible. We will also continue to inform students about research and internship opportunities in BIMS.

8.3.2 Offering a Five Year Baccalaureate-Master’s Degree: The College of Veterinary Medicine & Biomedical Sciences aspires to increase graduate opportunities for BIMS students by developing a five-year B.S./M.S. in BIMS.

Problem: Subvention and tuition issues must be resolved and new seats in graduate courses may be needed.

Efforts: The Assistant Dean will work with appropriate university officials to determine the best approach to offering the combined degree program, which may not require THECB approval. Subvention and tuition issues will also be resolved. He will also continue to work closely with CVM department heads to plan classes for additional non-thesis graduate students.

8.3.3 Increasing Student Diversity: The BIMS program strives to increase student diversity at Texas A&M University.

Problem: Efforts to increase diversity require additional assessment and additional funding.

Efforts: The Associate Dean for Undergraduate Education and BIMS faculty and staff are developing a proposal to the National Institutes of Health for a Bridges to the Baccalaureate grant. The proposed project will strengthen the pipeline between selected 2+2 community college partners and BIMS to increase the matriculation and graduation of underrepresented minority students from BIMS. In addition, the BIMS staff will continue their successful programs, such as the MERGE program for Regents scholars, recruitment visits to 250 high schools with geographic, ethnic and socio-economic diversity, recruiting at Texas A&M University’s Aggieland Saturday, and interactions with Texas A&M University Prospective Student Centers in various cities in Texas.
8.3.4 Globalizing Student Experiences: The BIMS program strives to globalize the student experience through studies abroad, as well as working and shadowing abroad.

Problem: Mexico is currently on a State Department warning list, which has decreased the opportunities for students to study abroad there. Studying abroad is very costly and, in these economic times, difficult to afford.

Efforts: The BIMS program encourages study abroad and work abroad programs through this and other institutions. Many programs give financial aid in addition to that which students can get through federally or state-funded means. Also, the BIMS program has a Spanish Certificate program that requires domestic shadowing and study abroad. There are domestic opportunities for shadowing in largely Hispanic populations in Texas, providing Spanish Certificate students a state-side means for cultural/language development. Alternative locations (e.g. Costa Rica) are also being explored. The Director of Biomedical Sciences has worked with staff at Sol Education Abroad to specifically target their program for Spanish Certificate students. Furthermore, the Department of Veterinary Physiology and Pharmacology Department hosts two studies abroad for BIMS students. As they are university-hosted, students are eligible for federal and state financial aid for summer school.

8.3.5 Remaining Distinct as an Undergraduate Degree Program in a Veterinary College: The BIMS program is distinct because it is an undergraduate degree-granting program in a professional school, and it wishes to maintain the advantages of the distinction. There are only 12 such programs known in the nation, of which the BIMS program is by far the largest.

Problem: There are two problems with being a unique interdepartmental program in a professional school. First, the success of the BIMS program is predicated on the willingness and ability of the departments and college to provide faculty and courses for BIMS students, given that the primary mission of the College of Veterinary Medicine & Biomedical Sciences is to educate and train veterinarians. The fact that they willingly do so and that the BIMS program has been very successful indicates that there is a strong culture of support in the college. The success of the BIMS program is also predicated on the willingness of the college to provide classroom support for the BIMS courses. At this point, we are limited in the numbers of new course offerings due to space and time constraints, as professional program courses must be assigned space as a top priority. The second problem is that benchmarking with peer programs is difficult because the missions of the BIMS program differ from those of more traditional or specialized baccalaureate programs, such as biology, biochemistry, or genetics.

Efforts: The support from faculty, departments, and the college that the BIMS program currently enjoys and the successes that it has achieved are not grounds for complacency. The Dean, Associate Deans, Assistant Dean, and Department Heads will continue to work together to meet the needs of BIMS undergraduate students, advance the BIMS program, and support faculty who are its foundation. Furthermore, as mentioned in Section 7.1 Classrooms and Laboratories, the Texas Higher Education Coordinating Board has recommended a significant increase in class size in the D.V.M. program, and this would require construction of a new facility. A new education building would benefit both the D.V.M. and BIMS programs. Lastly, for the purposes of Southern Association of College and Schools (SACS) accreditation, we will be comparing ourselves to similar programs, nationally, as well as consulting an outside stake-holder (e.g. a medical school).
LIST OF APPENDICES

I. Curricula Vitae of BIMS Faculty and Staff Members
II. Sample 2+2 Articulation Agreement with a Community College
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V. Syllabi for Core Upper Division Courses in BIMS
VI. New Student Conference Handbook
VII. Academic Advising Syllabus
VIII. Spanish Certificate Description
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XI. 491W Syllabus
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XIV. History of Courses Taught Last 5 Years with Enrollments
XV. Student Faculty Ratio
XVI. CVM Facilities Statement for AVMA Accreditation Self Study
CURRICULUM VITAE
Louise C. Abbott, PhD, DVM

EDUCATION:

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<td>PhD</td>
<td>University of Washington</td>
<td>Zoology</td>
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<td>DVM</td>
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PROFESSIONAL EXPERIENCE AND ACADEMIC APPOINTMENTS:

1999-Present  
Associate Professor, Department of Veterinary Integrative Biosciences, Texas A&M University, College Station, Texas

1995-Present  
Faculty Member, Neuroscience Program and Toxicology Program, Texas A&M University, College Station, Texas

1994-1999     
Assistant Professor, Department of Veterinary Anatomy & Public Health (department name changed to Veterinary Integrative Biosciences), Texas A&M University, College Station, Texas

1988-1994     
Member Neuroscience Faculty, University of Illinois at Urbana/Champaign, Urbana, Illinois

1989-1994     
Assistant Professor, Department of Veterinary Biosciences, College of Veterinary Medicine, University of Illinois at Urbana-Champaign, Urbana, Illinois

1988-1989     
Visiting Assistant Professor, Department of Veterinary Biosciences, College of Veterinary Medicine, University of Illinois at Urbana-Champaign, Urbana, Illinois

1983-1988     
Assistant Professor, Department of Veterinary and Comparative Anatomy, Pharmacology and Physiology, College of Veterinary Medicine, Washington State University, Pullman, Washington

1982-1983     
Postdoctoral Research Associate, Department of Veterinary and Comparative Anatomy, Pharmacology Physiology, College of Veterinary Medicine, Washington State University, Pullman, Washington

1979-1982     
Research Assistant, Department of Zoology, University of Washington, Seattle, Washington

1975-1978     
Teaching Assistant, Department of Zoology, University of Washington, Seattle, Washington

AWARDS AND HONORS:
Mortar Board, Whitman College, 1974
Order of Wailaatpu, Whitman College, 1974
Phi Beta Kappa National Honor Society, Whitman College, 1975
Graduated magna cum laude, with Honors in Major Study, Whitman College, 1975
Summer Fellowship, Developmental Biology Training Program, University of Washington, 1977
Phi Zeta Veterinary Honor Society, Washington State University, 1985
Graduate Student Travel Award, Washington State University, 1987
Seattle-King County Veterinary Medical Association Scholarship, Washington State University, 1988
Graduated cum laude, Washington State University, 1988
Arnold O. Beckman Research Award, University of Illinois, 1989
Phi Kappa Phi National Honor Society, University of Illinois, 1990
SAVMA Veterinary Medical Teaching Excellence Award in Basic Sciences, University of Illinois, 1990
College of Veterinary Medicine Teaching Award, University of Illinois, 1993
Fulbright Research Scholarship, Paris, France, 1994
TAMU Montague Center for Teaching Excellence Scholar of the College of Veterinary Medicine, 1997-1998
Sigma Xi National Honor Society, Texas A&M University, 1998
Samuel F. Scheidy Memorial Award, American Veterinary Medical Association (for research excellence), 1999
Finalist, Texas A&M University Women’s Faculty Network Mentor Award, 2006-2007
Nominated as a top reviewer in 2008 for Neurotoxicology and Teratology
The Association of Former Students of Texas A&M University Distinguished Achievement Award at the College Level for Teaching, Fall 2009
The Association of Former Students of Texas A&M University Distinguished Achievement Award at the University Level for Teaching, Spring, 2010
Pfizer Carl J. Norden Award for Teaching, Veterinary Medicine, Spring 2010

TEACHING EXPERIENCE:
Veterinary Integrative Biosciences 489: Developmental Neurotoxicology (2 credits; 30 contact hours) course coordinator – 2008, 2009, 2010 (spring semesters); 20 students

Veterinary Integrative Biosciences 612: Graduate Embryology (4 credits; 75 contact hours), Course coordinator – 2006, 2010 (spring semester); 10 students

Veterinary Integrative Biosciences 603: Graduate Neuroanatomy (4 credits; 75 contact hours)
Co-course coordinator – 2005, 2007 (spring semesters); 15 students

Biomedical Sciences 101: Introduction to Biomedical Sciences Course
Section coordinator – Section 501 (1 credit, 15 contact hours)- 2005, 2006 (fall semesters): 135 students

Veterinary Integrative Biosciences 485: Research projects - working in the Abbott laboratory
(63 undergraduate students mentored to date)

REFERREED PAPERS 2005-2010:


(Cover image used from our article)


(Cover image used from our article)


Book Chapters:
Leaner Mouse, Chapter 262 - in The Encyclopedia of Movement Disorders
Publication date 2009, by Louise C. Abbott. [Note – this is a peer-reviewed publication]
CURRENT EXTERNAL SUPPORT:

**Title:** Pathogenesis of Essential Tremor: Cerebellar Metabolism  
**Agency:** NIH- NINDS  
**Total Award Amt:** $2,320,000  
**Award Period:** 09/01/09 to 08/31/14  
**Person-months Committed per Year:** 0.3 person month (calendar)  
**Role:** Consultant

**Title:** CRCNS data sharing: Whole Mouse Brain Neuronal Morphology and Neurovasculature Browser  
**Agency:** National Science Foundation  
**Total Award Amt:** $114,024  
**Award Period:** 09/15/09 to 09/14/11  
**Person-months Committed per Year:** 1.0 person month (calendar)  
**Role:** Co-PI

**Title:** K-12 Zoonotic disease curriculum development  
**Agency:** National Center for Foreign Animal and Zoonotic Disease Defense – Department of Homeland Security  
**Total Award Amt:** $100,000  
**Award Period:** 07/01/10 to 06/30/11  
**Person-months Committed per Year:** 0.5 person month (calendar)  
**Role:** Co-Investigator
CURRICULUM VITAE
Henry Richard Adams, DVM, PhD

EDUCATION:

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<td>Texas A&amp;M University</td>
<td>Veterinary Science</td>
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<td>Texas A&amp;M University</td>
<td>Veterinary Medicine</td>
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<td>PhD</td>
<td>University of Pittsburgh</td>
<td>Pharmacology</td>
<td>1972</td>
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PROFESSIONAL EXPERIENCE AND ACADEMIC APPOINTMENTS:

1966-1968 Research Veterinarian, Captain, U.S. Army, Ft. Detrick, Maryland
1968-1972 Research Associate, Department of Pharmacology, University of Pittsburgh, School of Pharmacy
1972-1975 Assistant Professor, Department of Pharmacology, University of Texas Southwestern Medical School of Dallas
1975-1984 Associate Professor, Department of Pharmacology, University of Texas Southwestern Medical School of Dallas
1984-1992 Chairman, Department of Veterinary Biomedical Sciences, College of Veterinary Medicine, University of Missouri-Columbia
1984-1998 Professor, Department of Veterinary Biomedical Sciences, College of Veterinary Medicine, University of Missouri-Columbia
1986-1990* Chairman, University-Wide Ph.D. Graduate Program in Physiology Area, University of Missouri-Columbia (*became departmental program in Biomedical Sciences)
1986-1998 Professor, Department of Pharmacology, School of Medicine, University of Missouri-Columbia
1989-1992 Associate Director, Dalton Research Center, University of Missouri-Columbia
1992-1993 Interim Dean, College of Veterinary Medicine, University of Missouri-Columbia
1993-1998 Dean, College of Veterinary Medicine, University of Missouri-Columbia
1998-2009 Dean, College of Veterinary Medicine, Texas A&M University
2009-Present Professor, College of Veterinary Medicine, Texas A&M University

AWARDS AND HONORS:

1985 Keynote Speaker, Annual Meeting of the Society for Experimental Biology and Medicine, Oklahoma City, OK
1986 Outstanding Teacher Award in Medical Pharmacology, School of Medicine, University of Missouri-Columbia
1986 Distinguished Lecturer, Department of Physiology, School of Medicine, Louisiana State University
1988 Outstanding Teacher Award in Medical Pharmacology, School of Medicine, University of Missouri-Columbia
1989 Beecham Award for Research Excellence, University of Missouri-Columbia
1990 Weldon Springs Research Support Award, University of Missouri-Columbia
1990 Excellence in Education Award in Medical Pharmacology, School of Medicine, University of Missouri-Columbia
1993 Excellence in Education Award in Medical Pharmacology, School of Medicine, University of Missouri-Columbia
1993-94 President-Elect and President, Shock Society
1994 The 1994 Robert Knowles Lecturer and Keynote Speaker, Veterinary Emergency and Critical Care Society
1997  Missouri Veterinarian of the Year – Missouri Veterinary Medical Association
1998  Professor Emeritus, College of Veterinary Medicine, University of Missouri Columbia Dean Emeritus, College of Veterinary Medicine, University of Missouri-Columbia
1998  University of Missouri named new building “H. Richard Adams Conference Center”
1998  University of Missouri College of Veterinary Medicine Impact Award
1998  H. Richard Adams Scholarship established at the University of Missouri
1998  Honorary Diplomate, American College of Veterinary Emergency and Critical Care
1999  Review Committee, National Academy of Sciences, Institute of Medicine
CURRICULUM VITAE
Joe Arosh, DVM, PhD

EDUCATION:

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<td>Obstetrics &amp; Gynecology</td>
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<td>MVSc</td>
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<td>PhD</td>
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PROFESSIONAL EXPERIENCE AND ACADEMIC APPOINTMENTS:

2004-Present Assistant Professor, Department of Veterinary Integrative Biosciences Texas A&M University, College Station, Texas

2003-2004 Post-Doc, University of Montreal, Canada

1997-2000 Assistant Research Scientist, Department of Animal Biotechnology, Tamil Nadu Veterinary and Animal Sciences University, Madras India

AWARDS AND HONORS:
Dean's Recognition of Excellence for Research, Faculty of Medicine, Laval University, Canada, 2004
Outstanding Graduate Research Scientist Merit Award, Physiology-Endocrinology program, Faculty of Medicine, Laval University, Canada, 2004

TEACHING EXPERIENCE:
Endocrinology (VIBS604/BIMS489)

REFEREED PAPERS 2005-2010: (LAST 5 YEARS)


**CURRENT EXTERNAL SUPPORT:**
Cellular Transport of Prostaglandins in Ovine Uterus, Reproductive Biology, USDA - CSREES
CURRICULUM VITAE
Judith Marchand Ball, PhD, DVM

EDUCATION:

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<td>Louisiana State University</td>
<td>Biochemistry</td>
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PROFESSIONAL EXPERIENCE AND ACADEMIC APPOINTMENTS:

2002-present  Associate Professor with Tenure, Texas A&M University, Department of Vet. Pathobiology
2002-present  Associate Professor with Tenure, Health Science Center, Molecular and Cellular Medicine, College Station, TX
1997-2001     Assistant Professor, Texas A&M University, Department of Veterinary Pathobiology
1998-present  Assistant Professor, Joint appointment, Texas A&M University, Department of Medical Biochemistry and Genetics, College of Medicine
1997-present  Member, Graduate Faculty, Texas A&M University
1997-present  Head, Peptide Core Facility, Texas A&M University
2000-2007     Full member, Faculty of Genetics, Texas A&M University
2000-present  Full member, Interdisciplinary Faculty of Virology, Texas A&M University 2005-present serve as secretary.
2001-present  Full member, Interdisciplinary Faculty of Toxicology, Texas A&M University
2002-present  Associate Professor with tenure, Texas A&M University
2003-2007     Graduate Advisor, Department of Pathobiology, Texas A&M University
2003-present  Member, Center for Microencapsulation & Drug Delivery
2004-2007     Member, Center for Environmental Health

AWARDS AND HONORS:

Associate Professor with Tenure, Texas A&M University, Department of Vet. Pathobiology, 2002-present.
Associate Professor with Tenure, Health Science Center, Molecular and Cellular Medicine, College Station, TX 2002-present
Assistant Professor, Texas A&M University, Department of Veterinary Pathobiology, 1997 -2001.
Assistant Professor, Joint appointment, Texas A&M University, Department of Medical Biochemistry and Genetics, College of Medicine, 1998 - present.
Member, Graduate Faculty, Texas A&M University, 1997 - present.
Head, Peptide Core Facility, Texas A&M University, 1997 - present.
Full member, Faculty of Genetics, Texas A&M University, 2000 - 2007.
Full member, Interdisciplinary Faculty of Virology, Texas A&M University, 2000-present; 2005-present serve as secretary.
Full member, Interdisciplinary Faculty of Toxicology, Texas A&M University, 2001 – present.
Associate Professor with tenure, Texas A&M University, 2002 – present.
Graduate Advisor, Department of Pathobiology, Texas A&M University, 2003 – 2007
Member, Center for Microencapsulation & Drug Delivery, 2003-present
Member, Center for Environmental Health, 2004 - 2007
TEACHING EXPERIENCE:
BIMS 101 seminar course
VTPB 485 Directed Studies
VTPB 407 Adv. Micro. Lab: Virology. (developed and implemented new virology laboratory course)
VTPB 285 Directed Studies
VTPB 489 Physiological Chemistry I (developed and implemented new BIMS biochemistry course)
VTPB 489 Physiological Chemistry II

REFEREED PAPERS 2005-2010: (LAST 5 YEARS)

CURRENT EXTERNAL SUPPORT:
USDA-AFH, Co-I, “Determination of the Target Cell(s) and Infection Sequence of Cache Valley Virus in the Ovine Fetus” 2007-2009, $32,000.
VTPB Bridging funds, 2008-2009, $25,000.
CURRICULUM VITAE
Alice Blue-McLendon, DVM

EDUCATION:

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PROFESSIONAL EXPERIENCE AND ACADEMIC APPOINTMENTS

2006- present    Clinical Assistant Professor, Department of Veterinary Physiology and Pharmacology, Texas A&M University
2002-2006        Lecturer; Veterinarian at the Wildlife and Exotic Animal Center, Department of Veterinary Physiology and Pharmacology, Texas A&M University
1989-2002        Veterinary Clinical Associate; Veterinarian at the Wildlife and Exotic Animal Center, Veterinary Physiology and Pharmacology, Texas A&M University
1992-1996        Veterinary consultant to ratite and exotic animal ranches in the United States and the Netherland Antilles.
1989-1992        Residency in Zoological and Wildlife Medicine, College of Veterinary Medicine, Texas A&M University
1989             Relief Veterinarian for private practices in the Houston area

AWARDS AND HONORS:

2007 You’re The Tops Award, Prenatal Clinic, Bryan TX
2005 Jefferson Award for Community Service, Brazos Valley, TX
2003 Fish Camp Namesake, Texas A&M University
1993 Humanitarian of the Year, Brazos Animal Shelter, Bryan, TX
1989 Farmer Tannahil Award for Zoological Medicine
1985 Graduated cum laude, Biomedical Science
1983-1985 Dean's List Texas A&M University

TEACHING EXPERIENCE:

VTPP 323 Physiology of Domestic Animals - (1993-present)
VTPP 485 Problems course- Wildlife & Exotic Animal Center – (1994-present)
CURRICULUM VITAE
Candice Lea Brinkmeyer-Langford, PhD

EDUCATION:

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PROFESSIONAL EXPERIENCE AND ACADEMIC APPOINTMENTS:

2010-present  Assistant Research Scientist, VIBS, CVM, Texas A&M University
2007-2010    Postdoctoral Research Associate, VIBS, CVM, Texas A&M University
2003-2006    Graduate Research Assistant, VIBS, CVM, Texas A&M University
2002        Undergraduate Research Assistant, VAPH, CVM, Texas A&M University
2002        Undergraduate Research Assistant, VTPB, CVM, Texas A&M University

AWARDS AND HONORS:

Research grant award: College of Veterinary Medicine Postdoctoral Training Grant, 2010
Research grant award: USDA CSREES NRI 2008-35205-18768, 2008-2009
Assoc. of Former Students University Distinguished Graduate Student Award, 2007
Texas A&M Veterinary Faculty Auxiliary Graduate Award, 2007
Academic Excellence Award: Assoc. of Former Students Memorial Scholarship, 2006-2007
Best Graduate Student Platform Presentation, Texas Genetics Society Meeting, 2006
Second Place Graduate Student Platform Presentation, Dept. of VIBS retreat, 2006
Third Place Platform Presentation, CVM Graduate Student Asso. Research Sym., 2006
Finalist for Genetics Faculty Graduate Student Research Presentation, 2006
Primary author article on cover page of MAMMALIAN GENOME, Aug. 2005
Second Place Platform Presentation, TAMU Student Research Week Competition, 2005
Graduate Teaching Academy fellow, 2005
CVM Graduate Student Association Travel Award (3 times), 2005-2007
The Chancellor’s List (3 years), 2004-2006
CVM Graduate Student Fellowship, 2003
College of Agriculture and Life Sciences Distinguished Student Award, 2002
Robert C. Byrd Scholarship recipient (4 years), 1999-2002

TEACHING EXPERIENCE:

GENE 320, Biomedical Genetics (honors section)
VIBS 404

REFERREED PAPERS 2005-2010: (LAST 5 YEARS)


CURRENT EXTERNAL SUPPORT:
EDITH A. CHENAULT
Department of Veterinary Integrative Biosciences

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<th>Field</th>
<th>Year</th>
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<tbody>
<tr>
<td>PhD</td>
<td>Texas A&amp;M University</td>
<td>Agricultural Education</td>
<td>2008</td>
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<tr>
<td>MEd</td>
<td>Sul Ross State University</td>
<td>Education</td>
<td>1990</td>
</tr>
<tr>
<td>BS</td>
<td>Texas A&amp;M University</td>
<td>Agricultural Journalism</td>
<td>1978</td>
</tr>
</tbody>
</table>

WORK EXPERIENCE:

- Sept. 2007-Present: Lecturer, Department of Veterinary Integrative Biosciences, Texas A&M University
- June-July 2010: Lecturer, Department of Agricultural Leadership, Education, and Communication, Texas A&M University
- Aug. 2008-Dec. 2009: Part-time Instructor, Humanities Division, Blinn College

AWARDS AND HONORS:

- 2008: Best Dissertation, Association for Communication Excellence in Agriculture, Natural Resources, and Life Sciences research special interest group

COURSES TAUGHT:

- BIMS 481

INVITED REFEREED PAPERS AND PRESENTATIONS:

- 2007: Southern Association of Agricultural Scientists Agricultural Communications section, Mobile, AL. Presented paper, “ACE Members’ Spheres of Influence”
- 2002: Southern Association of Agricultural Scientists Agricultural Communications section, Orlando, FL. Co-presented paper, “Avoiding Foot in Mouth Disease”
EDUCATION:

<table>
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<tr>
<th>Degree/Training</th>
<th>Conferring Institution</th>
<th>Field</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>BS</td>
<td>Abilene Christian College</td>
<td>Biology</td>
<td>1956</td>
</tr>
<tr>
<td>DVM</td>
<td>Texas A&amp;M University</td>
<td>Veterinary Medicine</td>
<td>1959</td>
</tr>
<tr>
<td>MS</td>
<td>Baylor College of Medicine</td>
<td>Physiology</td>
<td>1971</td>
</tr>
</tbody>
</table>

PROFESSIONAL EXPERIENCE AND ACADEMIC APPOINTMENTS:

1978-Present  Professor, Veterinary Physiology and Pharmacology, Texas A&M University
1970-1978    Associate Professor, Veterinary Physiology and Pharmacology, Texas A&M University
1966-1970    Assistant Professor, Veterinary Physiology and Pharmacology, Texas A&M University
1965-1966    Post Doctoral Fellowship, Physiology Department, Baylor College of Medicine
1964-1965    Manager, Primate Research Support, Southwest Research Foundation
1961-1964    Private Veterinary Practice

AWARDS AND HONORS:

Texas Veterinary Medical Association (pharmacy Committee, Awards Committee)
American Society of Veterinary Physiology and Pharmacology
Phi Zeta
Phi Sigma
American Association of Veterinary Medical Colleges
Texas Veterinary Medical Association Faculty Achievement Award (1972)
Abilene Christian University Agricultural Alumni Award (1973)
Appreciation Award from Student Chapter of American Veterinary Medical Association (1980)
Gamma Sigma Delta, President Elect, 1984-85; President 1985-86
Former Student Association Faculty Teaching Award, College level (1986)
University Distinguished Teaching Award, (1990)
TAMU T-Camp Namesake (Summer 1993)
TAMU Fish Camp Namesake (Summer (1995)

TEACHING EXPERIENCE:

VTPP 425, Pharmacology
CURRICULUM VITAE
Ernest (Gus) G. Cothran, Jr., PhD

EDUCATION:

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<th>Year</th>
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<tr>
<td>BS</td>
<td>North Texas State University</td>
<td>Zoology</td>
<td>1973</td>
</tr>
<tr>
<td>MS</td>
<td>North Texas State University</td>
<td>Zoology</td>
<td>1975</td>
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<tr>
<td>PhD</td>
<td>University of Oklahoma</td>
<td>Genetics</td>
<td>1982</td>
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PROFESSIONAL EXPERIENCE AND ACADEMIC APPOINTMENTS:

2006-present Clinical Professor, Department of Veterinary Integrative Biosciences, College of Veterinary and Biomedical Sciences, Texas A&M University, College Station, TX

2000-2006 Research Professor, Department of Veterinary Science, and Director, Equine Blood Typing Research Laboratory, University of Kentucky, Lexington, KY

1992-2000 Associate Research Professor, Department of Veterinary Science, University of Kentucky, Lexington, KY

1991-1992 Adjunct Professor, Department of Biological Sciences, University of North Texas, Denton, TX

1986-1992 Assistant Research Professor, Department of Veterinary Science, 101 Animal Pathology, University of Kentucky, Lexington, KY

1985-1986 Assistant Scientist, Department of Genetics, Southwest Foundation for Biomedical Research, San Antonio, TX

1982-1985 Postdoctoral Scientist, Department of Genetics, Southwest Foundation for Biomedical Research, San Antonio, TX

1981-1982 Research Analyst, Population Genetics Laboratory, Savannah River Ecology Laboratory, Aiken, SC

1979-1981 National Environmental Research Park Research Assistant, Savannah River Ecology Laboratory, Aiken, SC

1977-1979 Teaching Assistant, Department of Zoology, University of Oklahoma, Norman, OK

1975-1977 Research Assistant, University of Oklahoma Biological Survey, Norman, OK

1975-1977 Curatorial Assistant, Division of Mammals, Stovall Museum of Science and History, University of Oklahoma, Norman, OK

1973-1975 Graduate Teaching Assistant, Department of Biological Sciences, North Texas State University, Denton, TX

1973 Undergraduate Research Assistant, Department of Biological Sciences, North Texas State University, Denton, TX

TEACHING EXPERIENCE:
BIMS 320/GENE 320 – Biomedical Genetics

REFERREED PAPERS 2005-2010: (LAST 5 YEARS)


CURRENT EXTERNAL SUPPORT:
CURRICULUM VITA

Michael Frederick Criscitiello, PhD

EDUCATION:

<table>
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<tr>
<th>Institution</th>
<th>Degree</th>
<th>Years</th>
<th>Major</th>
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<tr>
<td>University of North Carolina, Chapel Hill, NC</td>
<td>B.S.</td>
<td>1989-1993</td>
<td>Biology</td>
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<tr>
<td>East Carolina University, Greenville, NC</td>
<td>M.S.</td>
<td>1995-1997</td>
<td>Molecular Biology</td>
</tr>
<tr>
<td>University of Miami, Miami, FL</td>
<td>Ph.D.</td>
<td>1997-2003</td>
<td>Microbiology and Immunology</td>
</tr>
<tr>
<td>University of Maryland, Baltimore, MD</td>
<td>Postdoctoral</td>
<td>2003-2008</td>
<td>Immunology</td>
</tr>
</tbody>
</table>

POSITIONS:

1990-1995 Lab Assistant, Lineberger Comprehensive Cancer Center, UNC-CH.
1993 Teaching Assistant, biology laboratory, UNC-CH.
1995-1997 Teaching Assistant, comparative botany and zoology laboratory, ECU.
1998 Teaching Assistant, microbiology laboratory, University of Miami.
1997-2001 Assist in shark collection, pup delivery by Caesarian section and tissue harvest, Florida Keys.
2003 Adjunct Professor, Nova Southeastern University.
2003 Adjunct Professor, Miami-Dade Community College.
2003-2008 Frog colony maintenance, frog and shark dissection and tissue harvesting, University of Maryland at Baltimore.
2005-2007 Teach medical student immunology and gene therapy small group discussions, University of Maryland at Baltimore.
2008-present Assistant Professor in Veterinary Pathobiology, College of Veterinary Medicine and Biomedical Sciences, Texas A&M University

AWARDS AND HONORS:

1995 and 1996; McDaniel Scholarship for Excellence in Graduate Research
2000; travel award to present at ISDCI Congress in Cairns, Australia
2001; Departmental Graduate Student Appreciation Award
2001; Margaret Whelan Graduate Student Scholarship Fund Travel Award
2002; Who’s Who Among American Universities and Colleges
2003; travel award to speak at ISDCI Congress in St. Andrews, Scotland
2006; BD Biosciences travel award to speak at γδ T Cell Conference, Salk Institute, La Jolla CA
2007; travel award to speak at International Immunology in Rio de Janeiro, Brazil

RELEVANT PUBLICATIONS:


**FUNDED RESEARCH SUPPORT:**

2003-2006; NIH F32 AI056963 **Criscitiello** (PI), $130,972.00 direct costs

Origins of T Helper Cell Function in Adaptive Immunity

2008-2010; NIH NIAID K22 AI73888 **Criscitiello** (PI), $250,000.00 direct costs

Origins of Specialized Mucosal Lymphocyte Subsets and Immunoglobulin Isotype
CURRICULUM VITAE
Elizabeth Crouch, Ph.D.

PRESENT POSITION:
Title: Director, Biomedical Sciences Program

EDUCATION:
<table>
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<th>Degree/Training</th>
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<tr>
<td>B.S.</td>
<td>Texas A&amp;M University</td>
<td>Biomedical Science/ Biotechnology Option</td>
<td>1991</td>
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<tr>
<td>Ph.D.</td>
<td>Texas A&amp;M University</td>
<td>Genetics</td>
<td>1996</td>
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RECENT ACADEMIC APPOINTMENTS:
Dec. 1995-Feb. 1999 Postdoctoral Research Fellow U.T.M.D. Anderson Cancer Center, Science Park (On Fellowship approximately 2 years)
March, 1999-Dec., 1999 Research Associate U.T.M.D. Anderson Cancer Center, Science Park
Jan., 2000-May, 2000 Lecturer: A portion of time (30%) was dedicated to research, Dept. of Veterinary Anatomy and Public Health, Texas A&M University
Aug., 2000-May, 2001 Adjunct Professor Dept. of Biology, Boise State University, Idaho
July, 2001-Aug., 2001 Lecturer (temporary) (Genetics 320), Dept. of Veterinary Anatomy and Public Health, Texas A&M University
Aug., 2001-August 2002 Academic Advisor II (75%), Biomedical Science Program, College of Veterinary Medicine; Lecturer (25%), Dept. of Veterinary Anatomy and Public Health, Texas A&M University
Sept. 2002- Feb. 2008 Associate Director, Biomedical Science Program, College of Veterinary Medicine; Lecturer, Dept. of Veterinary Integrative Biosciences, Texas A&M University
Feb. 2008-Present Director, Biomedical Sciences Program, College of Veterinary Medicine; Lecturer, Dept. of Veterinary Integrative Biosciences, Texas A&M University
AWARDS AND HONORS (selected):

Feb. 1999  ACR-AFLAC Scholar in Cancer Research Award (travel award for meritorious abstract)
June 2002  Departmental Mini-Grant ($3000)
March 2003  Quality Enhancement Plan Grant ($4,500)
March 2004  Departmental Mini-Grant ($4000)
April 2008  Group Leadership Forum (by nomination)
April, 2008  Honorary member Gamma Sigma Delta

WORKSHOPS AND TRAINING SESSIONS/SEMINARS (selected):

April, 2000  Wakonse-South
Feb., 2002  Developing a Writing Intensive Course
July, 2002  Summer Seminar on Academic Administration
April, 2008  Group Leadership Forum (by nomination)

**I have also had training on Policies and Procedures from the TAMU Development Foundation. Additionally, I have yearly training updates in human resources, disbursement, fixed assets, purchasing, accounting, payroll, employee services (human resource) liaison, assessment and scholarship processing and review.

TEACHING EXPERIENCE:

Courses for which I am Professor of Record

<table>
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<tr>
<th>Undergraduate:</th>
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<th>Institution</th>
<th>Credit</th>
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<tr>
<td></td>
<td>GENE 320</td>
<td>Texas A&amp;M</td>
<td>3</td>
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<td></td>
<td>Biology 343</td>
<td>Boise State</td>
<td>3</td>
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<td>Fall ’00</td>
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<tr>
<td></td>
<td>Biology 445</td>
<td>Boise State</td>
<td>3</td>
<td>100</td>
<td>Spring ’01</td>
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<tr>
<td></td>
<td>GENE 320(H)</td>
<td>Texas A&amp;M</td>
<td>3</td>
<td>100</td>
<td>Summer ’01</td>
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<tr>
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<td>BIMS 101</td>
<td>Texas A&amp;M</td>
<td>3</td>
<td>100</td>
<td>Fall ’02</td>
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<tr>
<td></td>
<td>GENE 320(H)</td>
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<td>3</td>
<td>100</td>
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<tr>
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<td>BIMS 320</td>
<td>Texas A&amp;M</td>
<td>3</td>
<td>100</td>
<td>Summer ’07</td>
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<tr>
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<td>BIMS 320</td>
<td>Texas A&amp;M</td>
<td>3</td>
<td>100</td>
<td>Summer ‘08</td>
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<td></td>
<td>BIMS 320</td>
<td>Texas A&amp;M</td>
<td>3</td>
<td>100</td>
<td>Summer ‘09*</td>
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<td>BIMS 485</td>
<td>Texas A&amp;M</td>
<td>3</td>
<td>100</td>
<td>Spring ’08 and forward**</td>
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<td></td>
<td>BIMS 289</td>
<td>Texas A&amp;M</td>
<td>2</td>
<td>100</td>
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*stacked with an honors (H) section
**Monitor practical experience component of Spanish Certificate**

**Graduate:**

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<td>100</td>
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**Instructional Tools Developed**


**SERVICE ACTIVITIES (selected):**

- September 2001-October 2008: Public Policy Internship Program (P.P.I.P.) College of Veterinary Medicine representative to the advisory board
- January 2003-present: BIMS Curriculum Subcommittee
- September 2005-September 2008: University Scholarship Committee
- December 2006-present: Genetics Advisory Counsel for CVMBS
- January 2009-present: Academic Advisor Career Path Review Committee
- September 2009-present: NSCC: New Student Conference Committee
- September 2009-present: Assessment Liaison for CVMBS
- March 2010-present: Career Center Advisory Council
- September 2010 (beginning): Treasurer/Secretary Phi Kappa Phi Honor Society/Executive Board
- September 2010 (beginning): Academic Scholarship Selection Committee (University-wide)

**Professional Organizations:**

- 1990: (inducted) φκφ National Honor Society
- 1999: Associate Member of American Association of Cancer Research (AACR)
- 2001 to Present: TAAHP: Texas Association of Advisors of Health Professionals
- 2008: (inducted/honorary) Gamma Sigma Delta Agricultural Honor Society
CURRICULUM VITAE
Kevin O. Curley, Jr., MS

EDUCATION:

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<tr>
<td>BS</td>
<td>University of Rhode Island, Kingston</td>
<td>Animal Science and Technology</td>
<td>2001</td>
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<td>MS</td>
<td>Texas A&amp;M University</td>
<td>Physiology of Reproduction</td>
<td>2004</td>
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PROFESSIONAL EXPERIENCE AND ACADEMIC APPOINTMENTS:

2009-Present   Lecturer, Department of Veterinary Integrative Biosciences, Texas A&M University, College Station, TX
2007-2009      Instructor, Texas A&M University, College Station, TX
2006-2009      Graduate Teaching Assistant, Texas A&M University, College Station, TX
2003-2007      Graduate Teaching Assistant, Texas A&M University, College Station, TX
2004-2006      NSF Graduate Teaching Fellow in K-12 Education, Texas A&M University, College Station, TX

AWARDS AND HONORS:
Tom Slick Senior Graduate Research Fellowship 2009
- For exceptional Ph.D. research relevant to Texas agriculture
U.S. Senator Phil Gramm Doctoral Fellowship 2009
- For scholarly excellence and outstanding teaching
Ronnie L. Edwards Graduate Teaching Award in Animal Science 2009
- For important contributions to the undergraduate student experience
Mauro Procknor Memorial Award 2006, 2008
- For excellence in academics, research, and teaching

TEACHING EXPERIENCE:
BIMS 481- Seminar in Writing, 2009-Present
- Instructed 75-150 undergraduate biomedical science upperclassmen on the mechanisms by which knowledge is shared amongst researchers, clinicians and scientific professionals.
- Utilized a variety of writing-intensive assignments to strengthen the students’ ability to communicate science to the general public as well as scientific professionals.
- Designed and maintained a website to host video lectures and facilitate student discussion.

PUBLICATIONS 2005-2010: (LAST 5 YEARS)

**Book Chapters:**

CURRICULUM VITAE  
Tracy L. Cyr, PhD.  
2011

EDUCATION:

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<tr>
<td>Ph.D.</td>
<td>University of Missouri</td>
<td>Entomology</td>
<td>1999</td>
</tr>
<tr>
<td>M. S.</td>
<td>Washington State University</td>
<td>Entomology</td>
<td>1993</td>
</tr>
<tr>
<td>B. S.</td>
<td>University of California, Riverside</td>
<td>Entomology</td>
<td>1989</td>
</tr>
<tr>
<td>A. S.</td>
<td>Crafton Hills College</td>
<td>Biology</td>
<td>1977</td>
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</table>

PROFESSIONAL EXPERIENCE AND ACADEMIC APPOINTMENTS:

2005- Present  Clinical Assistant Professor, Department of Veterinary Pathobiology, School of Veterinary Medicine & Biomedical Sciences, Texas A&M University, College Station, TX
2002-2004  Postdoctoral Research Scientist, Animal Parasitic Diseases Laboratory, USDA, ARS, Beltsville, MD
2000-2002  Assistant Professor, Department of Biological Sciences, Ohio Northern University, Ada, OH
2000  Postdoctoral Research Fellow, Department of Veterinary Pathobiology, School of Veterinary Medicine, University of Missouri, Columbia, MO
1999-2000  Postdoctoral Research Fellow, Department of Molecular Microbiology and Immunology, School of Medicine, University of Missouri, Columbia MO
1998-2000  Adjunct Faculty, Department of Biology, William Woods University, Fulton MO

AWARDS AND HONORS:

1990  George Tamaki Memorial Scholarship (WSU)
1990  Washington State Entomology Student Award (WSU)
1991  Washington State Graduate Support Award (WSU)
1992  George Tamaki Memorial Scholarship (WSU)
1996-97  Graduate Research Project Competition (University of Missouri); Received in order to travel to Rocky Mountain Laboratory, NIH/NIAID, Hamilton, MT., to learn microimmuno- fluorescent antibody testing under the direction of Dr. Tom Schwan and Dr. Willy Burgdorfer.
1997  Leonard E. Haseman Superior Graduate Achievement Award (University of Missouri)

TEACHING:

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<th>Course No.</th>
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<th>Semester</th>
<th>Contact Hours</th>
<th>No. of Students</th>
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<tr>
<td>Biomedical Parasitology</td>
<td>VTPB 487*</td>
<td>28/42 lect 9/14 labs</td>
<td>Spring</td>
<td>46</td>
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<td>VTPB 487H</td>
<td>(as above +)</td>
<td>Spring</td>
<td>55</td>
<td>1-2</td>
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<tr>
<td>VTPB 485</td>
<td>6hr/wk</td>
<td>Fall/Spring</td>
<td>90-180</td>
<td>1-2</td>
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PUBLICATIONS:

RESEARCH/SCHOLARLY ACTIVITIES:

<table>
<thead>
<tr>
<th>Years</th>
<th>SPONSOR</th>
<th>Title (PI and/or Co-PI)</th>
<th>Total Grant Amount</th>
<th>Funding 2008-2009</th>
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<tbody>
<tr>
<td>2007</td>
<td>Schubot Exotic Bird Health Center research support</td>
<td>A survey of potential insect vectors of avian haemoproteozoans at the Ft. Worth zoo (Co-PI)</td>
<td>5,000</td>
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<tr>
<td>2007-8</td>
<td>TAES Research Opportunity Grant</td>
<td>Investigation of biting fly vectors of hemorrhagic disease virus on Texas ranches</td>
<td>27,000</td>
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<td>($15,000.00)+ matching from San Angelo</td>
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CURRICULUM VITAE  
Donald S. Davis, PhD

EDUCATION:

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<th>Degree/Training</th>
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<th>Field</th>
<th>Year</th>
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<tr>
<td>BA</td>
<td>University of Texas, Austin, TX</td>
<td>Biology</td>
<td>1972</td>
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<td>MAg</td>
<td>Texas A&amp;M University</td>
<td>Wildlife Science</td>
<td>1974</td>
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<td>PhD</td>
<td>Texas A&amp;M University</td>
<td>Veterinary Public Health</td>
<td>1979</td>
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PROFESSIONAL EXPERIENCE AND ACADEMIC APPOINTMENTS:

1975-1977 Texas A&M University, Veterinary Pathology, Technician I
1977-1979 Texas A&M University, Veterinary Public Health, Graduate Assistant
1979-1981 Texas A&M University, Veterinary Pathology, Lecturer/Post Doctoral Research Associate
1981-1982 Texas A&M University, Veterinary Pathology, Lecturer/Assistant Research Scientist
1982-1985 Texas A&I, Kingsville, Caesar Kleberg Wildlife Research Institute, Associate Research Scientist
1985-present Texas A&M University, Veterinary Pathobiology, Associate Professor
1985-present Texas A&M University, Wildlife and Fisheries Sciences, Associate Professor

AWARDS AND HONORS:

1970 Phi Eta Sigma,
1977 Phi Sigma
March 1980 Sigma Xi Society
May 1984 Gamma Sigma Delta
April 1988 Beecham Award for Research Excellence
Jun 1989 USDA Superior Service Award for Outstanding Research, by Sec. of Agric., Wash. D.C.
1989 Recipient, USDA's Superior Service Award for Outstanding Research
1994 ESCOP/ACOP Leadership Development Program

TEACHING EXPERIENCE:

VTPB 301/WFSC427, Intro. Wildlife Diseases, 3 Credit Hours
VTPB 485, Directed Studies, 3 Credit Hours
VTPB 948, Exotic Livestock Medicine, 3 Credit Hours

REFERREED PAPERS 2005-2010: (LAST 5 YEARS)


EXTERNAL SUPPORT:
* LSU – Effectiveness of Modified Brucella Vaccines Expressing Other Antigens Against Tuberculosis. USDA/APHIS/VS, 2002-2004, Co Principal Investigator
* TAES – Effectiveness of Orally Delivered Titanium Dioxide as a Fecal Biomarker in Red Deer. USGS, 1 yr., Apr 2003-Feb 2004, Principal Investigator
* Characterization of PRNP Regulatory Region Polymorphisms in Cervus elaphus nelsoni Using a Comparative Genomics Approach. Cervid Research and Recovery Institute 2006 (Extramural); $7500.00. TAMU, College of Veterinary Medicine. Co-Principal Investigator.


TAES/VTPB - Creation and Utilization of Large Scale Genomic Resources to Study Disease Resistance and Traits of Interest in White-tailed Deer (Odocoileus virginianus). Approved and Funded. 3/20/07. 1 year. PI C. Seabury, CoPI’s S. Cooper, J. Womack, and D. Davis.


Texas Deer Association – Improved Diagnosis of Epizootic Hemorrhagic Disease in White-tailed Deer. Dec 2008. $49,000 Gift to Texas A&M Foundation, D. Davis, PI

CURRICULUM VITAE
Brady Allen Dennis, B.S., M.S.

PRESENT POSITION AND ADDRESS:
Title: Senior Academic Advisor I
Office: Biomedical Sciences
       Texas A&M University
       College Station, TX 77843-4465
Home:  2603 Greenberry Cir.
       College Station, TX 77845
Phone: (979)255-3428

EDUCATION:

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<tr>
<td>A.A.</td>
<td>Cisco Junior College</td>
<td>N/A</td>
<td>1995</td>
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<td>B.S.</td>
<td>Texas A&amp;M University</td>
<td>BIMS</td>
<td>2000</td>
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<td>M.S</td>
<td>Texas A&amp;M University</td>
<td>WFSC</td>
<td>2004</td>
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<td>PhD</td>
<td>Texas A&amp;M University</td>
<td>EDAD</td>
<td>In Progress</td>
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PROFESSIONAL APPOINTMENTS:

1. Senior Academic Advisor, Biomedical Science, College of Veterinary Medicine, Texas A&M University, January 5, 2004 – Current.

HONORS AND RECOGNITIONS:

1. 2010 Leadership Institute
2. Partners in Learning Award 2009 Diversity Awards
3. Texas A&M University 2008 President’s Award for Academic Advising
4. Kappa Delta Pi Honor Society, Texas A&M
5. Who’s Who Among Students in American Universities and Colleges
6. Gamma Sigma Delta Honor Society, Texas A&M
7. Phi Theta Kappa Honor Society, Cisco Junior College
8. Dean’s List, Cisco Junior College
COMMITTEE APPOINTMENTS AND ORGANIZATIONS:

1. Student-Athlete Advising Council
2. Texas A&M University Mentors Program Representative
3. New Student Conference Committee
4. Texas Association of Advisors for the Health Professions
5. Texas Association of Collegiate Registrars and Admissions Officers
6. Texas Association of Student Financial Aid Administrators
7. Aggieland Saturday Planning Committee

PROFESSIONAL EXPERIENCE AND RESPONSIBILITIES:

Senior Academic Advisor, Biomedical Science Program
February 2001- Present

TEACHING EXPERIENCE:

Undergraduate:

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Institution</th>
<th>Credit</th>
<th>% of Course</th>
<th>Formal Contact Hr</th>
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<tr>
<td>BIMS 101</td>
<td>Texas A&amp;M</td>
<td>1</td>
<td>100</td>
<td>2 hours/week</td>
<td>Fall ’01-Spring ’04</td>
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SELECTED PRESENTATIONS / WORKSHOPS

Aggieland Saturday – *Is there a Doctor in the House?* Texas A&M 2004 – 2010
Aggie Day in SA (San Antonio) - *Biomedical Science Program San Antonio* November 2006
2+2 Articulation Agreement Presentations for 11 Participating Community Colleges *Biomedical Science Overview* Texas A&M 2003-2010
College Update Representative for Biomedical Science - *Biomedical Science Program updates and requirements* Texas A&M 2004 - 2007
MAES-Pre College Planning Day – *Biomedical Science Overview* Texas A&M 2004
New curriculum requirements and matriculation estimates for Biomedical Science *Dean’s office presentation for the College of Veterinary Medicine and Biomedical Sciences* 2006
Aggie VIP (Very Important Prospective)- *Biomedical Science Overview* Texas A&M 2005
Access to Majors – *Meeting the academic requirements at Texas A&M* Texas A&M 2004
Freshmen and Transfer New Student Conferences – *Undergraduate Curriculum and Expectation in Biomedical Science* Texas A&M 2002 – 2007
Student Counseling Services Suicide Prevention Workshop *Question Persuade Refer* Texas A&M 2006
Texas Higher Education Coordinating Board Workshop *Closing the Gaps* Austin, TX 2004
Summer Seminar on Academic Administration *TAMU Department of Educational Administration and Human Resource Development and the Center for Leadership in Higher Education* Texas A&M 2005
Texas Guaranteed Loan Corporation representative for the Biomedical Sciences office 2009 and 2010.
CURRICULUM VITAE
James N. Derr, PhD

EDUCATION:

<table>
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<th>Degree/Training</th>
<th>Conferring Institution</th>
<th>Field</th>
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<tr>
<td>BS</td>
<td>Cameron University</td>
<td>Biology</td>
<td>1980</td>
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<td>Lawton, OK</td>
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<tr>
<td>MS</td>
<td>Sul Ross State University</td>
<td>Zoology</td>
<td>1982</td>
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<td></td>
<td>Alpine, TX</td>
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<td>PhD</td>
<td>Texas A&amp;M University</td>
<td>Genetics</td>
<td>1990</td>
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<td></td>
<td>College Station, TX</td>
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PROFESSIONAL EXPERIENCE AND ACADEMIC APPOINTMENTS:

1985 – 1987 Graduate Teaching Assistant Genetics
1987 – 1989 Tom Slick Research Fellow Genetics
1989 – 1990 Staff Research Assistant Genetics & WFSC
1990 – 1993 Post-Doc Research Associate Animal Sciences
1993 – 1999 Assistant Professor Veterinary Pathobiology
1999 – 2007 Associate Professor Veterinary Pathobiology
2000 – 2002 Chair – Graduate Faculty of Genetics Genetics
2007 – present Professor

AWARDS AND HONORS:

Phi Kappa Phi Distinguished Alumnus Award, Cameron University, 2000.

TEACHING EXPERIENCE:

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<th>Course</th>
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<th>%</th>
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<tr>
<td>GENE 301(honors)</td>
<td>General Genetics</td>
<td>4</td>
<td>100%</td>
<td>spring (92, 93, 95, 03)</td>
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<td>GENE 320</td>
<td>Biomedical Genetics</td>
<td>3</td>
<td>100%</td>
<td>spring (95 – 00, 04 - present)</td>
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<td>GENE 405</td>
<td>Mammalian Genetics</td>
<td>3</td>
<td>25%</td>
<td>fall (94 – present)</td>
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<td>GENE 481</td>
<td>undergraduate research</td>
<td>1 – 3</td>
<td>100%</td>
<td>various semesters since fall 94</td>
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<td>GENE 485</td>
<td>undergraduate problems</td>
<td>1 – 3</td>
<td>100%</td>
<td>various semesters since fall 94</td>
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REFERREED PAPERS 2005-2010: (LAST 5 YEARS)


11. Osterstock, JB; Fosgate, GT; Cohen, ND; Derr, JN; Manning, EJB; Collins, MT; Roussel, AJ. 2008. Familial associations with paratuberculosis ELISA results in Texas Longhorn cattle. Veterinary Microbiology.129 (1-2), 131-138.


**Book Chapters:**


**CURRENT EXTERNAL SUPPORT:**


Bison Herd Genetic Architecture and Management – Working Toward a Species-Wide Conservation Approach. The Nature Conservancy – RJ Kose funding for Conservation Biology. Bob Hamilton (TNC), co-PI, J. Derr (Co-PI) and N. Halbert. Total funded $60,000 (RJ Kose) and $60,000 match (TNC), Total funded $120,000. (2008 - 2009).

A Systematic Approach to African Wildlife Conservation Genetics. The Dallas Safari Club. J. Derr (PI), J. Lane Easter and Nigel Theisen. Total requested $1,000,000. Total funded $10,000 with addition pending.


CURRICULUM VITAE
Scott V. Dindot, PhD

EDUCATION:
Degree/Training Conferring Institution Field Year
BS Texas A&M University Molecular and Cell Biology 1999
PhD Texas A&M University Genetics 2002

PROFESSIONAL EXPERIENCE AND ACADEMIC APPOINTMENTS:
2008-present Assistant Professor (Tenure Track), Texas A&M University College of Veterinary Medicine and Biomedical Sciences, Department of Veterinary Pathobiology
2003-2007 Adjunct Faculty, Lone Star College, Department of Biological Sciences
2002-2008 Postdoctoral Fellow, Laboratory of Dr. Arthur Beaudet, Baylor College of Medicine, Department of Molecular and Human Genetics
2002-2003 Doctoral Research, Laboratory of Dr. Jorge Piedrahita, North Carolina State University College of Veterinary Medicine, Department of Molecular Biomedical Sciences
1999-2002 Doctoral Research, Laboratory of Dr. Jorge Piedrahita, Texas A&M University College of Veterinary Medicine, Department of Veterinary Anatomy and Public Health
1998-1999 Undergraduate Research Assistant, Laboratory of Dr. Jorge Piedrahita, Texas A&M University College of Veterinary Medicine, Department of Veterinary Anatomy and Public Health
1994-1998 Undergraduate Research Assistant, Laboratory of Dr. George Davis, Texas A&M University Health Science Center, Department of Pathology and Laboratory Medicine

AWARDS AND HONORS:
2003 NICHD National Research Service Award (T32). Department of Molecular and Human Genetics, Baylor College of Medicine, Houston, Texas.
2004 NIH Pediatric Loan Repayment Grant.
2004 NINDS National Research Service Award (T32). Cain Pediatric Neurology Research Foundation Laboratories, Baylor College of Medicine, Houston, Texas. (Declined).
2004 NICHD National Research Service Award (F32). “Analysis of genomic imprinting at the Ube3a locus”.

TEACHING EXPERIENCE:
2010 Genetic and Molecular Toxicology (VTTP 676), Texas A&M University
Guest lectures on genomic imprinting and disease given as part of a graduate level course
2010 Molecular Biotechnology (BIOT 635), Texas A&M University
Guest lectures on epigenetics and next generation sequencing technologies as part of a graduate level course
2003-2007 Biology (BIOL 1406), Lone Star College. Lectures on basic biology given as part of an undergraduate course

REFERREED PAPERS 2005-2010: (LAST 5 YEARS)

CURRENT EXTERNAL SUPPORT:
2010-2012 USDA-FAH. (Cohen PI, Dindot Co-PI). “Epigenetic Regulation of Developmental Changes in Foal Neutrophils”
EDUCATION:

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<th>Degree/Training</th>
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<tr>
<td>BA</td>
<td>York University</td>
<td>Philosophy</td>
<td>1975</td>
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<tr>
<td>MA</td>
<td>York University</td>
<td>Economics</td>
<td>1976</td>
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<tr>
<td>MS</td>
<td>Ohio State University</td>
<td>Molecular Genetics</td>
<td>1986</td>
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<tr>
<td>PhD</td>
<td>Ohio State University</td>
<td>Molecular Genetics</td>
<td>1988</td>
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PROFESSIONAL EXPERIENCE AND ACADEMIC APPOINTMENTS:

1991-1992 Research Associate, Department of Neurology, Baylor College of Medicine
Identification of CTG expansion in 3’ UTR in a new serine/threonine protein kinase as mutation at the myotonic dystrophy locus.

1992-1996 Instructor, Department of Neurology, Baylor College of Medicine
Construction of recombinant DM kinase, biochemical characterization of kinase activity, immunolocalization of DM kinase in skeletal muscle and lens, yeast two-hybrid analysis to identify Raf kinase, PP2A as proteins that directly interact with DM kinase, immunofluorecence data indicating cell cycle dependent shuttling of kinase between ER/Golgi and mitotic apparatus.

1997-1999 Assistant Research Scientist, Dept. of Veterinary Anatomy and Public Health, Texas A&M University. Construction of targeting vectors designed to inactivate the prion protein (PrP) locus and the blactoglobulin locus in bovine fetal fibroblasts, creation and patenting of a BSE-resistant allele of the bovine prion protein gene.

2000-present Research Assistant Professor, Dept. of Veterinary Integrative Biosciences, Texas A&M University.

TEACHING EXPERIENCE:
BIMS 452/GENE 452 – Modifying the Mammalian Genome for Biomedical Research – Fall Semesters only
**CURRICULUM VITAE**

Thomas A. Ficht, PhD

**EDUCATION:**

<table>
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<tr>
<td>BS</td>
<td>Polytechnic Institute of Brooklyn</td>
<td>Chemistry</td>
<td>1972</td>
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<tr>
<td>MS</td>
<td>Polytechnic Institute of Brooklyn</td>
<td>Chemistry</td>
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<td>MPhil</td>
<td>Columbia University</td>
<td>Biochemistry</td>
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<tr>
<td>PhD</td>
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**PROFESSIONAL EXPERIENCE AND ACADEMIC APPOINTMENTS:**

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<th>Position</th>
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<tr>
<td>1998-present</td>
<td>Professor</td>
<td>Texas A&amp;M University (VTPB)</td>
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<tr>
<td>1990-98</td>
<td>Associate Professor</td>
<td>Texas A&amp;M University (VTPB)</td>
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<tr>
<td>1984-90</td>
<td>Assistant Professor</td>
<td>Texas A&amp;M University (VTMI)</td>
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<tr>
<td>1980-84</td>
<td>Postdoctoral Fellow</td>
<td>University of Iowa (MICR)</td>
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<td>1976-80</td>
<td>Grad. Research Assistant</td>
<td>Vanderbilt University (MICR)</td>
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<tr>
<td>1974-75</td>
<td>Grad. Teaching Assistant</td>
<td>Columbia University (BICH)</td>
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<tr>
<td>1971-72</td>
<td>Research Assistant</td>
<td>Polytechnic Institute of Brooklyn (CHEM)</td>
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<tr>
<td>1967-68</td>
<td>Chemistry Lab Assistant</td>
<td>Thomas A Edison, H.S. (CHEM)</td>
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**AWARDS AND HONORS:**

- TAES Faculty Fellow 2005
- Distinguished Scientist Award, Texas A&M University Sigma Xi 2004
- Received 2000 Pfizer Award for Research Excellence 2000

**TEACHING EXPERIENCE:**

- VTPB 489 – Physiological Chemistry for Biomedical Sciences II – 3 credit hours
- VTPB 485 – Directed Studies – 1-4 credit hours

**REFERREED PAPERS 2005-2010:**


EXTERNAL SUPPORT:
Microencapsulation and Vaccine Delivery Research. 10/06-9/08. DOD/USAMRMC. Co-PI.
Region VI Center of Excellence for Biodefense and Emerging Infectious Diseases Research. (1/1/04- 12/31/09) Co-Investigator w/ L. G. Adams and R. Tsolis. NIH.
Training grant in Animal Biotechnology. 7/02-8/07. Principal Investigator. USDA/NNTG 2002-38420-5806 (CSREES).
CURRICULUM VITAE
Tamy C. Frank-Cannon, DVM, PhD

EDUCATION:

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<tr>
<td>BS</td>
<td>Texas A&amp;M University</td>
<td>Zoology</td>
<td>1992</td>
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<td>BS</td>
<td>Texas A&amp;M University</td>
<td>Veterinary Sciences</td>
<td>1993</td>
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<td>DVM</td>
<td>Texas A&amp;M University</td>
<td>Veterinary Medicine</td>
<td>1996</td>
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<td>PhD</td>
<td>Texas A&amp;M University</td>
<td>Veterinary Anatomy</td>
<td>2005</td>
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PROFESSIONAL EXPERIENCE AND ACADEMIC APPOINTMENTS:

2008 – present Lecturer, Texas A&M University College Station, Texas
2007 – 2008 Postdoctoral Researcher II, UT Southwestern Medical Center Dallas, Texas
2005 – 2007 Postdoctoral Researcher I, UT Southwestern Medical Center Dallas, Texas
2003 – 2005 Postdoctoral Research Associate, Texas A&M University College Station, Texas
2002 – 2003 Veterinary Clinical Associate, Texas A&M University College Station, Texas
2001 – 2002 Graduate Teaching Assistant, Texas A&M University College Station, Texas
2000 – 2001 Veterinary Clinical Associate, Texas A&M University College Station, Texas
1996 – 2000 Associate Veterinarian, Nolana Animal Hospital McAllen, Texas
1993 – 1995 Gross Anatomy Tutor, Texas A&M University College Station, Texas
1993 – 1994 Gross Anatomy Laboratory Assistant, Texas A&M University College Station, Texas

AWARDS AND HONORS:

Postdoctoral Training Certificate in Research, UT Southwestern Medical Center, Dallas, Texas, January 2008
Society for Neuroscience – Postdoctoral Travel Award Fellow, November 2007
Keystone Symposia Scholarship – Molecular Mechanism of Neurodegeneration Meeting, January 2007
American Association of Anatomist Student Travel Award, April 2006
Plum Endowed Scholarships in Veterinary Medicine – Fellowship Summer & Fall 2005
College of Veterinary Medicine Graduate Student Association Research Symposium, Poster Presentation Award, 3rd Place, April 26, 2005
Fisher Institute Medical Research Award, April 15, 2005
Texas A&M Faculty of Neuroscience, Graduate Student Poster Presentation Award, 2nd Place, March 31, 2005.
Who’s Who Among Students in American Universities & Colleges, Texas A&M University, 2005
The Chancellor’s List, 2004-2005
Ethel Ashworth-Tsutsui Memorial Award for Research, November 9, 2004
Phi Zeta, Honor Society of Veterinary Medicine, inducted 2004
Sigma Xi, The Scientific Research Society, inducted 2004
Texas A&M Faculty of Neuroscience Travel Award, November 2003 & 2005
American Association of Veterinary Anatomist, Graduate Student Competition, Oral Presentation, First Place, August 2, 2003
Fisher Institute Medical Research Award, April 11, 2003
Cajal Club, Nissl Body’s Graduate Student Poster Presentation Award, April 2002
American Association of Anatomist, Graduate Student Travel Award, April 2002, & April 2005
College of Veterinary Medicine Graduate Student Association Travel Award, April 2001, April 2002, April 2005
Gamma Sigma Delta, The Honor Society of Agriculture, inducted 2001
The Honor Society of Phi Kappa Phi, inducted 2001
TAMU Student Research Week, Graduate Student Research Award, First Place Biological Sciences, Division II, March 2001
College of Veterinary Medicine Graduate Student Merit Fellowship, 2001-2002
George C. Shelton Endowed Veterinary Scholarship, 1994-1995
Bachelor of Science in Veterinary Science awarded Cum Laude, 1993
Bachelor of Science in Zoology awarded Cum Laude, 1992
H.R. Lewis/Julia Ball Lee Scholarship, academic year 1991-1992
College of Science Dean’s Honor Roll, Spring semester 1989 and Fall semester 1990
College of Science Distinguished Student Award, Spring semesters 1990, 1991, and 1992

TEACHING EXPERIENCE:
VIBS 305 – Biomedical Anatomy – 4 credit hours

REFERREED PAPERS 2005-2010:
## CURRICULUM VITA

Norma Field Funkhouser, M.L.I.S.

### EDUCATION:

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<tr>
<td>B.A.</td>
<td>University of Delaware</td>
<td>Biological Sciences</td>
<td>1967</td>
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<tr>
<td>MLIS</td>
<td>University of Texas at Austin</td>
<td>Library and Information Science</td>
<td>1988</td>
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### PROFESSIONAL EXPERIENCE AND ACADEMIC APPOINTMENTS:

- **8/2006- Present**  
  Associate Professor of Library Science, Texas A&M University Libraries and Veterinary Integrative Biosciences, Texas A&M University, College Station, TX

- **3/2003-8/2006**  
  Associate Professor, Texas A&M University Libraries, Veterinary Librarian, Medical Sciences Library, Texas A&M University, College Station, TX

- **1996-2003**  
  Librarian III, Veterinary Information Specialist, Medical Sciences Library, Texas A&M University, College Station, TX

- **1993-1996**  
  Librarian II, Veterinary Information Specialist, Medical Sciences Library, Texas A&M University, College Station, TX

- **1990-1993**  
  Lecturer, Veterinary Information Specialist, Medical Sciences Library, Texas A&M University, College Station, TX

- **2000-8/2006**  
  Senior Lecturer, Department of Veterinary Anatomy & Public Health, Texas A&M University, College Station, TX

- **1988-2000**  
  Lecturer, Department of Veterinary Anatomy & Public Health, Texas A&M University, College Station, TX

- **1986-1988**  
  Non-Affiliated Student Worker, Department of Veterinary Public Health, Texas A&M University, College Station, TX  
  (GAT for VTPH 485 "Online Information Retrieval")

- **Summer 1987**  
  Part-time worker, Department of Technical Services and Reference Desk, Medical Sciences Library, Texas A&M University, College Station, TX

- **1980-1986**  
  Science teacher (General Science, Life Science, Earth Science, Anthropology and Biology), Upper-School Advisor and Testing Administrator, St. Michael's Academy, Bryan, TX

- **1972-1973**  
  Research Assistant (laboratory of Dr. Carl Arbesman), Allergy Research Laboratory, Buffalo General Hospital, Buffalo, NY

- **1969-1972**  
  Research Assistant, (laboratory of Dr. George Fukui) Department of Microbiology & Immunology, Wallace Laboratories, Cranbury, NJ

- **1967-1969**  
  Research Assistant, (laboratory of Dr. Stephen Taub) Department of Biology, Princeton University, Princeton, NJ

### AWARDS AND HONORS:

- Senior Member, Academy of Health Information Professionals (1993-1998)
- 1998 Distinguished Librarianship Award, Texas A&M University Association of Former Students
- Member of Beta Phi Mu (International Library Honor Society) (1989-Present)
TEACHING:
First-year seminar (UPAS 181 - 536 – “A Apple a Day Keeps the Doctor Away) – (1 credit hour) – Fall 2009
- supported with $500 by Office of the Dean of Undergraduate Programs and Associate Provost for
Academic Services
First-year seminar (VIBS 285 – “A Apple a Day Keeps the Doctor Away) – (1 credit hour) – Fall 2008 –
supported with $2000 by Office of the Dean of Undergraduate Programs and Associate Provost for
Academic Services
Introduction to Biomedical Sciences – BIMS 101, sections 502, 503, 504 – (1 credit hour each), Spring
and Fall semesters 2006 - present
Computer Applications in Veterinary Public Health Research - VAPH420 (3 credit hours), (VIBS 420 as of
Spring 2005), laboratory instructor, Spring semester, 1989-2008
“Electronic Pharmaceutical Resources,” guest lecture to BICH 107, Fall 2001-Fall 2007.
“Electronic Resources of the Medical Sciences Library,” guest lecture to all sections of BIMS 101, Fall and
spring semesters, 1997 – present.

PUBLICATIONS:
1. “Cool Veterinary Web Site of the Month,” Norma F. Funkhouser, Bimonthly column published in
the Texas Veterinarian, 10/99 – present.
2. “AHIP – How to be Recognized and Why You Should Bother,” PowerPoint slide show, published
CURRICULUM VITAE
BARBARA GASTEL, MD, MPH

EDUCATION:

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<td>BA</td>
<td>Yale, summa cum laude</td>
<td>Biology/History of Medicine</td>
<td>1974</td>
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<td>MD</td>
<td>Johns Hopkins</td>
<td>Medicine</td>
<td>1978</td>
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<td>MPH</td>
<td>Johns Hopkins</td>
<td>Public Health</td>
<td>1978</td>
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PROFESSIONAL EXPERIENCE AND ACADEMIC APPOINTMENTS:

2008- Professor of Veterinary Integrative Biosciences and of Humanities in Medicine
Texas A&M University

2004-2008 Associate Professor of Veterinary Integrative Biosciences
and of Humanities in Medicine
Texas A&M University

1989-2004 Associate Professor of Journalism and of Humanities in Medicine
Texas A&M University

1985-1989 Assistant Dean for Teaching and Teaching Evaluation
and Assistant Adjunct Professor of Epidemiology and International Health
University of California, San Francisco School of Medicine

1983-1985 Visiting Professor of Technical Communication
Beijing Medical University (now Peking University Health Science Center)
Beijing, China

1981-1983 Assistant Professor of Science Writing
Massachusetts Institute of Technology

1980-1981 Special Assistant to the Director
National Center for Health Care Technology
US Department of Health and Human Services

1978-1980 Special Assistant, Office of the Director
National Institute on Aging
National Institutes of Health

AWARDS AND HONORS:

John P. McGovern Science and Society Award, Sigma Xi, The Scientific Research Society, 2010
Council of Science Editors Award for Meritorious Achievement, 2010
Honored Editor in the Life Sciences, Board of Editors in the Life Sciences, 2006
John P. McGovern Award for Excellence in the Field of Medical Communications, American Medical Writers Association Southwest Chapter, 2006
Outstanding Texas A&M Science Communicator, Texas A&M University Chapter of Sigma Xi, 2003
Distinguished Service Award, Council of Science Editors, 2002
Fellow, American Association for the Advancement of Science, elected 2001
Harold Swanberg Distinguished Service Award, American Medical Writers Association, 1998
Golden Apple Award, American Medical Writers Association, 1993
Fellow, American Medical Writers Association, elected 1991
Phi Beta Kappa, 1973
TEACHING EXPERIENCE: (Courses taught in last five years Undergraduate)
BIMS 481: Seminar in Writing (Spring 2006, Fall 2006, Spring 2007, Fall 2007)
BIMS 481: Biomedical Explorations through Narrative (Fall 2009, Spring 2010)

SELECTED PUBLICATIONS:

Books

Self-Study Workshop (Workbook and CD)

Chapter

Articles

CURRENT EXTERNAL SUPPORT:
Knowledge Community Editorship for AuthorAID @ INASP, from International Network for the Availability of Scientific Publications, half of salary and benefits, September 2007–December 2012
CURRICULUM VITAE
Christine L. Heaps, PhD

EDUCATION:

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<tr>
<td>BS</td>
<td>University of Michigan, Ann Arbor</td>
<td>Kinesiology</td>
<td>1988</td>
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<tr>
<td>MA</td>
<td>University of Texas, Austin</td>
<td>Exercise Physiology</td>
<td>1990</td>
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<td>PhD</td>
<td>University of Missouri, Columbia</td>
<td>Physiology</td>
<td>1999</td>
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PROFESSIONAL EXPERIENCE AND ACADEMIC APPOINTMENTS:

1988-1990 Graduate Research Assistant, Human Performance Laboratory, University of Texas
1990 Research Consultant, U.S. Olympic Training Ctr, Int’l Ctr for Aquatic Research, CO
1990-1995 Research Scientist, KRUG Life Sciences, Armstrong Laboratory, Brooks AFB, TX.
1992 Research Consultant, Egyptian Aerospace Medical Facility, Cairo, Egypt
1995-1999 Graduate Research Assistant, Department of Physiology, University of Missouri
2000-2002 Postdoctoral Fellow, Dept. of Biomedical Sciences, University of Missouri
2003-2004 Research Assistant Professor, Dept Biomedical Sciences, University of Missouri
2004-2010 Assistant Professor, Dept. of Vet Physiology & Pharmacology, Texas A&M University
2010-present Associate Professor with tenure, Dept. of Vet Physiology & Pharmacology, Texas A&M University (effective September 1, 2010)

AWARDS AND HONORS:

1988 University of Michigan Honors Graduate
1990 Phi Kappa Phi National Honor Society - University of Texas, Austin Chapter
1999 American Heart Association Predoctoral Fellowship, Heartland Affiliate
2002 Individual National Research Service Award, NIH/NHLBI
2003 Invited Speaker, Microcirculatory Society Young Investig Symp, Experimental Biology
2005 Affiliate member, Huffines Institute of Sports Medicine & Human Performance, Dept. of Health & Kinesiology, Texas A&M University
2005 Investigator, Cardiovascular Research Institute, Texas A&M University System Health Science Center
2005 Fellow, Michael E. DeBakey Center for Comparative Medicine & Biomedical Devices, Texas A&M University
2009 Richard H. Davis Teaching Award, College of Veterinary Medicine & Biomedical Sciences, Texas A&M University

TEACHING EXPERIENCE:

BIMS 101, Introduction to Biomedical Science – career options in biomedical sciences
1 lecture hour, 14 contact hours
Department of Biomedical Sciences

VTPP 434, Physiology for Bioengineers; Muscle Physiology
8 lecture hours
Department of Veterinary Physiology & Pharmacology

VTPP 485, Directed Studies
REFERREED PAPERS 2005-2010: (LAST 5 YEARS)

CURRENT EXTERNAL SUPPORT:
R01 HL64931 (Heaps – PI) 08/01/2006-07/31/2011
National Institutes of Health, NHLBI ($1,250,000 TDC)
Chronic coronary occlusion, exercise and NO
The primary goal of this research is to determine the cellular mechanisms responsible for effects of exercise training on nitric oxide bioavailability and role in the underlying setting of chronic coronary artery occlusion and collateral-dependent perfusion.
R01 HL092916 (Stewart RH & Wilson E – MPI; Heaps – CoI) 09/01/2009-08/31/2011
National Institutes of Health, NHLBI ($609,314 TDC)
Short-term mesenteric lymphatic adaptation to trauma-related intestinal edema
The main goal of this proposal is to determine the effect of mesenteric venous hypertension and intestinal edema on both functional and molecular adaptations in mesenteric lymphatic vessels in a bovine model.
R01 HL084494 (Lloyd PG – PI; Heaps – Consultant) 07/01/2009-06/30/2014
National Institutes of Health, NHLBI
Regulation of placenta growth factor by hemodynamics and reactive oxygen species
Role as consultant will contribute to the conduct and analysis of cannulated microvessels experiments as part of Specific Aim to examine the effects of shear stress on gene expression in isolated vessels.
CURRICULUM VITAE
James D. Herman, PhD, DVM

EDUCATION:

<table>
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<th>Degree/Training</th>
<th>Conferring Institution</th>
<th>Field</th>
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<tr>
<td>BS</td>
<td>Texas A&amp;M University</td>
<td>Veterinary Science</td>
<td>1988</td>
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<tr>
<td>MS</td>
<td>Texas A&amp;M University</td>
<td>Educational Psychology, Measurement and Evaluation</td>
<td>2001</td>
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<tr>
<td>PhD</td>
<td>Texas A&amp;M University</td>
<td>Veterinary Physiology and Pharmacology</td>
<td>1995</td>
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<td>DVM</td>
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<td>1989</td>
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PROFESSIONAL EXPERIENCE AND ACADEMIC APPOINTMENTS:

2005-Present  Clinical Associate Professor, Veterinary Physiology & Pharmacology, Texas A&M University. Duties include teaching 130 senior-level undergraduate students physiology in both lecture and laboratory (VTPP 423). Course coordinator for VTPP 427 (Physiology II). Lecturer in VTPP 924 (professional-level Pharmacology). Periodically assist with laboratory activities in VTPP 924. Lecturer in VTPP 925 (professional-level Pharmacology). Administer NSF-RET grant, including participant recruitment and evaluation. Collaborator on NSF-REU grant, specifically looking at areas of evaluation of performance. Serve on committees including Information Technology (CVM), BIMS Curriculum Committee, College Curriculum Committee (CVM), University Curriculum Committee (TAMU), Aggie Honor Code Council (TAMU), University Disciplinary Appeals Panel (TAMU).

AWARDS AND HONORS:

Teaching Excellence Award, Recipient, Spring 2010
Gamma Sigma Delta - The Honor Society of Agriculture, Outstanding Teacher in the College of Veterinary Medicine and Biomedical Sciences, Spring 2010
Teaching Excellence Award, Finalist, Fall 2009
Student Led Achievement in Teaching Excellence (SLATE) Award, Recipient, Spring 2009
Association of Former Students: Distinguished Achievement Award in Teaching at the University Level; Spring 2008
Association of Former Students: Distinguished Achievement Award in Teaching at the College Level; Fall 2006
Golden Key Honor Society, Honorary Member, Fall 2000
Outstanding Professor, Biomedical Science Teaching Award, December 1999
Kappa Delta Pi, Education Honor Society, Spring 1999
Camp Herman, Fish Camp, Summer 1998
Richard Davis Teaching Award for Outstanding Promise as a Young Faculty Member, Spring 1997
Appointed as Member of Graduate Faculty, 1995
Dean’s List, 1984, 1985
Academic Achievement Scholarship, 1983, 1984
Eagle Scout, Boy Scouts of America, 1980

TEACHING EXPERIENCE:
VTPP 605/606. Physiology, Consultant, Instructor, Spring 2011 to present.
VTPP 425, Pharmacology – University of Padua, Italy, Summer 2009
VTPP 423, Biomedical Physiology I – University of Padua, Italy, Summer 2008, Summer 2009
VTPP 489, Special Topics in Physiology – Contributions of Italian Physiologists, University of Padua, Italy, Summer 2008, Summer 2009
VTPP 925. Pharmacology II, Lecturer, Spring 2005 - present
VTPP 924, Pharmacology I, Lecturer, Fall 2004 & 2005.
VTPP 427/489, Biomedical Physiology II, Course Coordinator, Spring 1998 to present.
VTPP 912, Physiology II, Instructor, Spring 1997.
VTPP 640 - 648, Instructor, Physiology modules, Fall 1996.
VTPP 423, Biomedical Physiology I, Instructor, Fall 1996 to present.

CURRENT EXTERNAL SUPPORT:
National Science Foundation. Bioengineers and Teachers Working the Internet, Networks, and Gemeinschaft: Research Experience for Teachers. $400,000, 2005-2008, 2010
CURRICULUM VITAE
Anton G. Hoffman, DVM, PhD

EDUCATION:

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<tr>
<td>BS</td>
<td>Texas A&amp;M University</td>
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<td>1985</td>
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<td>DVM</td>
<td>Texas A&amp;M University</td>
<td>Veterinary Medicine</td>
<td>1986</td>
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<td>PhD</td>
<td>Texas A&amp;M University</td>
<td>Veterinary Anatomy</td>
<td>1992</td>
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</table>

PROFESSIONAL EXPERIENCE AND ACADEMIC APPOINTMENTS:

2003 to present: Clinical Associate Professor, Dept. of Veterinary Integrative Biosciences, TAMU
1998 to 2003: Senior Lecturer, Dept. of Veterinary Anatomy & Public Health, TAMU
1993 to 1998: Lecturer, Dept. of Veterinary Anatomy & Public Health, TAMU
1991 to 1993: Asst. Professor, non-tenure track, Dept. of Veterinary Anatomy & Public Health, TAMU
1987 to 1991: Veterinary Clinical Associate, Dept. of Veterinary Anatomy & Public Health, TAMU
1986 to 1987: Veterinarian (small animal practice), San Antonio, TX
1984 to 1986: Medical Illustrator, Dept. of Veterinary Anatomy & Public Health, TAMU

AWARDS AND HONORS:

DVM Texas license #6014 (active)
Recipient of the Carl J. Norden/Phizer Distinguished Teacher Award, 1996
Distinguished Leadership Award, International Directory of Distinguished Leadership, 1996
Namesake for Fish Camp 1997, Texas A&M University
Nominated for Association of Former Students Distinguished Achievement Award, Individual Student Relations, 1997
Nominated for Association of Former Students Distinguished Achievement Award, Teaching, 1999
Nominated for Association of Former Students Distinguished Achievement Award, Individual Student Relations, 2000
Named the instructor who most contributed to their veterinary medical education in basic and pre-clinical sciences by the Class of 1999 (former students survey).
Recipient of the Association of Former Students Distinguished Achievement Award for Teaching, College Level, 2001
Nominated for Association of Former Students Distinguished Achievement Award, Teaching, University Level, 2004
Nominated for Association of Former Students Distinguished Achievement Award, Teaching, University Level, 2006
Recipient of the John H. Milliff Award for Teaching, 2006
Recipient of the Carl J. Norden/Phizer Distinguished Teacher Award, 2007
Recipient of the Association of Former Students’ Distinguished Achievement Award for Teaching, University Level, 2007
Nominated for the National Carl J. Norden/Phizer Distinguished Teacher Award, 2007

TEACHING EXPERIENCE:

VIBS 305, Biomedical Anatomy
VIBS 485, Directed Studies
REFERREED PAPERS 2005-2010:

Book Chapters:
CURRICULUM VITAE
Henry J. Huebner, PhD

EDUCATION:

Degree/Training         Conferring Institution                  Field             Year
---                    ---                                      ---               ---
BS                     Texas A&M University                  Agronomy          1990
MS                     Texas A&M University                  Soil Science      1993
PhD                    Texas A&M University                  Toxicology        2002

PROFESSIONAL EXPERIENCE AND ACADEMIC APPOINTMENTS:

2009-Present           Lecturer (Joint Appointment), Dept. of Veterinary Integrative Biosciences, Texas A&M University
2006-Present           Senior Academic Advisor, Biomedical Sciences Program, Texas A&M University
2005-2006              Assistant Research Scientist, Dept. of Veterinary Integrative Biosciences, Texas A&M University
2002-2005              NIH Postdoctoral Fellow, Dept. of Veterinary Integrative Biosciences, Texas A&M University
1997-2002              Graduate Research Assistant, Dept. of Veterinary Anatomy & Public Health, Texas A&M University
1994-1997              Laboratory Supervisor, Dept. of Veterinary Anatomy & Public Health, Texas A&M University
1994-1997              Risk Assessment Consultant, Environmental Reclamation Associates, Inc., College Station, TX
1991-1993              Graduate Research Assistant, College of Agriculture & Life Sciences, Dept. of Soil & Crop Sciences, Texas A&M University

AWARDS AND HONORS:

Editorial Assistant, Journal of Food Additives & Contaminants, 2003-present
NIH National Research Service Award Postdoctoral Fellowship, 2002-2005
Outstanding Graduate Student Award, College of Veterinary Medicine, Texas A&M University, 2001
John Kincaid Academic Scholarship, College of Agriculture & Life Sciences, Dept. of Soil & Crop Sciences, Texas A&M University, 1989
Luther Jones Academic Scholarship, College of Agriculture & Life Sciences, Dept. of Soil & Crop Sciences, Texas A&M University, 1989
J. F. Mills Memorial Scholarship, College of Agriculture & Life Sciences, Dept. of Soil & Crop Sciences, Texas A&M University, 1988

TEACHING EXPERIENCE:

Lecturer, Dept. of Veterinary Integrative Biosciences, BIMS 484, 2009-present
Instruction assistance in VIBS 404, 618, 619, and 689; College of Veterinary Medicine & Biomedical Sciences, Texas A&M University, 2001-present
Laboratory Instructor, Agronomy 301, College of Agriculture & Life Sciences, Dept. of Soil & Crop Sciences, Texas A&M University, 1991

PUBLICATIONS:


CURRICULUM VITAE
Jon F. Hunter, DVM, MS, BS

EDUCATION:

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<tr>
<td>B.S.</td>
<td>Northwestern University</td>
<td>Electrical Engineering</td>
<td>1965</td>
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<tr>
<td>M.S.</td>
<td>Iowa State University</td>
<td>Biomedical Engineering</td>
<td>1971</td>
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<tr>
<td>D.V.M.</td>
<td>University of Illinois</td>
<td>Veterinary Medicine</td>
<td>1977</td>
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POSITIONS HELD:

Industry:
- President, Stress Limited, Inc., 1989-1999
- President, Creative Veterinary Medical Systems, Inc. 1996-1997
- President, Wings Across Texas, 2002-2006

Academia:
- Research Assistant, Department of Biomedical Engineering, Iowa State University, 1970-1971
- Teaching Assistant, College of Veterinary Medicine, University of Illinois, 1973-1977
- Assistant Professor, Joint Appointment, Department of Veterinary Physiology and Pharmacology, College of Veterinary Medicine and Department of Bioengineering, College of Engineering, Texas A&M University, 1977-1984
- Associate Professor, Joint Appointment, Department of Veterinary Physiology and Pharmacology, College of Veterinary Medicine and Department of Bioengineering, College of Engineering, Texas A&M University, 1984-1988
- Associate Professor, Department of Veterinary Physiology and Pharmacology, College of Veterinary Medicine, Texas A&M University, 1988-1990
- Associate Professor and Head, Department of Veterinary Physiology and Pharmacology, College of Veterinary Medicine, Texas A&M University, 1990-1992

- Professor and Head, Department of Veterinary Physiology and Pharmacology, College of Veterinary Medicine, Texas A&M University, 1992-1993
- Professor, Department of Veterinary Physiology and Pharmacology, College of Veterinary Medicine, Texas A&M University, 1993-present

AWARDS AND HONORS:
- Boy Scouts of America - Eagle Scout
- Tau Beta Pi (Engineering)
- Eta Kappa Nu (Electrical Engineering)
- Sextant (Naval Honorary) - President, Northwestern University (1964-65)
- Graduation with Honors - U.S. Navy Pre-Flight School (1965)
- Graduation with Honors - U.S. Navy Basic Flight Training (1966)
- Graduation with Honors - U.S. Navy Aviation Safety Officers' Course (1968)
Upjohn Award for Proficiency in Veterinary Clinical Medicine (1977)
Dr. L. E. Fisher Award for Proficiency in Small Animal Medicine (1977)
Phi Zeta (Veterinary Medicine) - President of ETA Chapter, TAMU (1982-83)
Richard H. Davis Teaching Award (1983)
TAMU Science Communicator Award - Sigma Xi (1991-1992)
Gamma Sigma Delta (1993)
Namesake for Aggie Fish Camp - Camp Hunter (1996)
Distinguished Teaching Award, The Association of Former Students of Texas A&M University (1996)
Distinguished Teaching Award, The Association of Former Students of Texas A&M University (1996)
Phi Kappa Phi (1997)
Thamann University Professorship for Undergraduate Teaching Excellence (2005-07)
Distinguished Achievement Award, The Association of Former Students of Texas A&M University (2006)

BIMS COURSES TAUGHT (last 5 years):
- VTPP 423 Biomedical Physiology I
- VTPP 425 Pharmacology
- VTPP 427 Biomedical Physiology II
- VTPP 485 Famous Italian Medical Scientists

PUBLICATIONS (related to teaching):
- Hunter, J.F., Krishan, S., Barbour, S.J., et. al.: Mathematical exercises for 6th and 7th grade students – a part of an environmental health based adventure series (16 lessons developed as of December, 2007)

RESEARCH ACTIVITIES (related to teaching):
- Bluebonnet Educational Series. Educational software for chemistry, physics, and biological science laboratories. Copyright by Texas A&M University.
- SCI-LAB. Hardware for chemistry, physics, and biological science laboratories. Manufactured and marketed by Biomedical International. (Engineering Consultant).
- Testing Paradigm for Verifying Scholastic Integrity in High Stakes Examinations. Provisional patent in progress.
CURRICULUM VITAE
Ivan V. Ivanov, PhD

EDUCATION:

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<tr>
<td>BS</td>
<td>Sofia University, Bulgaria</td>
<td>Mathematics</td>
<td>1987</td>
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<tr>
<td>PhD</td>
<td>University of South Florida, USA</td>
<td>Mathematics</td>
<td>1999</td>
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PROFESSIONAL EXPERIENCE AND ACADEMIC APPOINTMENTS:

- 2005-current  Assistant Professor, Department of Veterinary Physiology and Pharmacology, Texas A&M University
- 2003-2005    NCI Postdoctoral Trainee, Statistics Department and Department of Electrical Engineering, Texas A&M University
- 2000-2003    Visiting Assistant Professor, Department of Mathematics, Texas A&M University
- 1999-2000    Teaching Research Associate, Department of Mathematics, Syracuse University

REFERREED PAPERS 2005-2010: (LAST 5 YEARS)


CURRENT EXTERNAL SUPPORT:
Simultaneous Gene Expression Analysis of Coding and Non-coding RNAs in Colon Cancer Prevention, R01 CA129444
Funding Agency NIH/NCI, National Institutes of Health
Role: Collaborator
CURRICULUM VITAE
Gregory Johnson, PhD

EDUCATION:

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<th>Degree/Training</th>
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<tr>
<td>BS</td>
<td>University of Wyoming</td>
<td>Zoology</td>
<td>1984</td>
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<td>MS</td>
<td>University of Wyoming</td>
<td>Microbiology</td>
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<td>PhD</td>
<td>University of Wyoming</td>
<td>Animal Science</td>
<td>1997</td>
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PROFESSIONAL EXPERIENCE AND ACADEMIC APPOINTMENTS:

2008 – Present  Associate Professor, Department of Veterinary Integrative Biosciences, Texas A&M University (TAMU)
2002 – 2008     Assistant Professor, Department of Veterinary Integrative Biosciences, Texas A&M University (TAMU)
2002 – Present  Faculty, Center for Animal Biotechnology & Genomics
2002 – Present  Faculty, Interdisciplinary Faculty of Reproductive Biology
2005 – Present  Chairperson, Interdisciplinary Faculty of Reproductive Biology
2005 – Present  Member, Center for Environmental and Rural Health
2001 – 2002     Assistant Professor, Department of Animal and Veterinary Science, University of Idaho, Moscow, Idaho
1997 – 2001     Assistant Research Scientist, Texas Agricultural Experiment Station, College Station, TX
1988 – 1995     Research Associate II, Department of Animal Science, College of Agriculture, University of Wyoming

AWARDS AND HONORS:

Phi Beta Kappa Honor Society
Gamma Sigma Delta Honor Society
Sigma Xi Honor Society
Finalist, New Investigator Award, Society for the Study of Reproduction, 1997
National Research Service Award, National Institutes of Health (DHHS/NIH #1-F32-HDO 8501-
Vice Chancellor’s Award in Excellence for Team Research in Uterine Biology and Pregnancy, 2005, (Fuller W. Bazer, Robert C. Burghardt, Greg A. Johnson, Thomas E. Spencer and Guoyao Wu).
Editorial Board Member, Biology of Reproduction, 2004
Board of Reviewing Editors, Biology of Reproduction, 2007-present

TEACHING EXPERIENCE:

VIBS 343, Histology, 4hr credit, Fall 2005-present
VIBS 489, Biomedical Neuroendocrine and Endocrine Disorders, 3 hrs credit, Fall 2007

REFERREED PAPERS 2005-2010: (LAST 5 YEARS)


**CURRENT EXTERNAL SUPPORT:**
Arginine Nutrition, Placental Angiogenesis and Fetal Growth in Pigs, Reproductive Biology, USDA – CSREES
Biological Function of Uterine Osteopontin in Porcine Implantation, Reproductive Biology, USDA – CSREES
How Sphingosine 1 - Phosphate Promotes Angiogenesis During Pregnancy, Reproductive Biology, USDA – CSREES
Sphingosine-1-phosphate Mediates Uterine Angiogenesis, Other, USDA - CSREES
CURRICULUM VITAE
Larry Johnson, PhD

EDUCATION:

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<tr>
<td>BS</td>
<td>North Carolina State University</td>
<td>Animal Science</td>
<td>1971</td>
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<td>Honors Program</td>
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<tr>
<td>MS</td>
<td>Virginia Polytechnic Institute &amp; State University</td>
<td>Reproductive Physiology</td>
<td>1974</td>
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<tr>
<td>PhD</td>
<td>Colorado State University</td>
<td>Reproductive Physiology</td>
<td>1978</td>
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PROFESSIONAL EXPERIENCE AND ACADEMIC APPOINTMENTS:

1992-present  Professor of Veterinary Integrative Biosciences, College of Veterinary Medicine & Biomedical Sciences, Texas A&M University, College Station, Texas.
1987-1992    Associate Professor of Veterinary Anatomy, Texas A&M University, College Station, Texas.
1980-1987    Assistant Professor of Cell Biology, The University of Texas Health Science Center at Dallas Southwestern Medical School.
1979         Assistant Instructor of Cell Biology, The University of Texas Health Science Center at Dallas Southwestern Medical School.
1978-1979    Postdoctoral Research Fellow in Reproductive Biology, The University of Texas Health Science Center at Dallas Southwestern Medical School.
1974-1978    Graduate Research Assistant as Ph.D. Candidate, Colorado State University.
1971-1974    Graduate Research Assistant as M.S. Candidate, Virginia Polytechnic Institute and State University.

AWARDS AND HONORS:

NIH New Investigator Research Award, 1983-1986; 1988 Young Andrologist Award, from the American Society of Andrology; Invited speaker (Spermatogenesis, Animal Species and Humans) at 1988 International Symposium on Gamete Physiology, Serono Symposia, USA; Invited speaker (Spermatogenesis in humans and animal species), 1990 Japan Society of Andrology; Invited speaker (Spermatogenesis in domestic animals and approaches to its enhancement) at the XI Brazilian Congress of Animal Reproduction 1995; Invited speaker (Efficiency of Spermatogenesis in Humans), College of Medicine, University of Utrecht, The Netherlands, 1996; Invited speaker (Transplantation on Spermatogenesis: Sperm Decline in Humans), La Federation Francaise Pour L’etude de la Reproduction, 1997; Research Career Development Award 1991-1996; Editorial Boards of Biology of Reproduction (1989-1995), of AGE (1992-1995), and Journal of Andrology (1997-present); University-level teaching award from TAMU Honors Undergraduate Program, 1996; College-level Teaching Award in Biomedical Science Undergraduate Program, 1999; The KINDER Award (Kids in Need of Drug Evaluation and Rx Treatment Clinic in Houston, TX) for contributions to the well being of children at risk, 2001, through our Partnership for Environmental Education and Rural Health Program (http://peer.tamu.edu); Local Texas A&M University Chapter of Sigma Xi Science Communication Award, 2001.
TEACHING EXPERIENCE:

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<th>Course Title</th>
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<tr>
<td>Biology of Mammalian Cells &amp; Tissues</td>
<td>TAMU</td>
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<td>80%</td>
<td>90</td>
<td>1998-Present</td>
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<tr>
<td>VAPH 343 Histology</td>
<td>TAMU</td>
<td>4</td>
<td>80%</td>
<td>90</td>
<td>1998-2004</td>
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<td>VAPH 489 Special Study</td>
<td>TAMU</td>
<td>¾</td>
<td>80%</td>
<td>30/student</td>
<td>1998- Present</td>
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REFERREED PAPERS 2005-2010: (LAST 5 YEARS)


CURRENT EXTERNAL SUPPORT:

NSF GK12 grant “Fellows Integrate Science in Rural Middles Schools, Larry Johnson, PI, 2007-2011, $1,700,000.

NIH NCRR RLS RR022711-01A2 “Science Promotion in Rural Middle Schools: Phase I and II” Johnson PI 09/01/2007-06/30/2012 $1,351,569.
CURRICULUM VITAE
Daniel H. Jones, DVM

EDUCATION:

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<tr>
<td>BA</td>
<td>University of Winnipeg</td>
<td>1970</td>
</tr>
<tr>
<td>MSc</td>
<td>University of Guelph</td>
<td>1975</td>
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<tr>
<td>DVM</td>
<td>University of Guelph</td>
<td>1976</td>
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<td>Onatario Veterinary College</td>
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PROFESSIONAL EXPERIENCE AND ACADEMIC APPOINTMENTS:

1986-Present  Associate Professor, Department of Veterinary Physiology and Pharmacology, Texas A&M University, College Station, Texas
1989 (Spring) Visiting Professor of Toxicology, Atlantic Veterinary College, University of Prince Edward Island
1983         Assistant Professor with Tenure, Department of Veterinary Physiology and Pharmacology, Texas A&M University, College Station, Texas
1976-1983    Assistant Professor, Department of Veterinary Physiology and Pharmacology, Texas A&M University, College Station, Texas
1975         Research Associate, University of Guelph
1973-1974    Research Associate, University of Guelph
1972         Research Associate, University of Guelph

AWARDS AND HONORS:
Diplomate of the American Board of Toxicology
Diplomate of the American Board of Veterinary Toxicology
Fellow, American Academy of Veterinary and Comparative Toxicology Fellow, American College of Toxicology The College of Veterinarians of Ontario, Canada

TEACHING EXPERIENCE:
VTPP 425, Pharmacology
CURRICULUM VITAE
Gladys Y.-P. Ko, PhD

EDUCATION:

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<tr>
<td>BS</td>
<td>National Cheng-Kung University</td>
<td>Biology</td>
<td>1989</td>
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<td>MS</td>
<td>National Yang-Ming Medical College</td>
<td>Anatomical Sciences</td>
<td>1991</td>
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<tr>
<td>PhD</td>
<td>Northeastern Ohio Universities College of Medicine affiliated with Kent State University</td>
<td>Biomedical Sciences</td>
<td>1996</td>
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PROFESSIONAL EXPERIENCE AND ACADEMIC APPOINTMENTS:

1991-1992 Research Assistant, Dr. Hwa-Min Hwang’s Laboratory, Department of Anatomy, Chung Gung Medical College, Taiwan.
1996-1999 Postdoctoral Research Fellow, Dr. Paul Kelly’s Laboratory, Department of Neurobiology and Anatomy, University of Texas-Houston Medical School, Houston, TX.
1999-2000 Postdoctoral Fellow II, Dr. Stuart Dryer’s Laboratory, Department of Biology and Biochemistry, University of Houston, Houston, TX.
2000-2004 Research Associate, Dr. Stuart Dryer’s Laboratory, Department of Biology and Biochemistry, University of Houston, Houston, TX.
2004-2010 Assistant Professor, Department of Veterinary Integrative Biosciences, Texas A&M University, College Station, TX.
2008-present Adjunct Assistant / Associate professor, Department of Neurosciences and Experimental Therapeutics, College of Medicine, Texas A&M Health Science Center, College Station, TX.
2010-present Associate Professor, Department of Veterinary Integrative Biosciences, Texas A&M University, College Station, TX.

AWARDS AND HONORS:

1989 Annual Scientific Research Award, National Cheng-Kung University, Taiwan.
1989-1991 Graduate Student Scholarship Award, National Yang-Ming Medical College, Taiwan.
1990 C. Yin, M.D. Memorial Scholarship Award, National Yang-Ming Medical College, Taiwan.
1993-1994 Tuition Scholarship, Northeastern Ohio Universities College of Medicine, OH.
1994-1996 Teaching Assistantship, Northeastern Ohio Universities College of Medicine, OH.
1997-1999 NIH Training Grant, Department of Neurobiology and Anatomy, University of Texas-Houston Medical School, Houston, TX.
2001-2004 NIH Individual National Research Service Award (NIH F32 EY 13920), Houston, TX.

TEACHING EXPERIENCE:

2005 Spring, Mammalian Comparative Neurology (VAPH 450 stack-up with VAPH 603); two lectures
2005 Fall, Mammalian Comparative Neurology (VAPH 450); 3 credit hours; solo instructor and course director.
2007 Spring, Mammalian Functional Neuroanatomy (VIBS 450), stack-up with graduate Neuroanatomy (VIBS 603); 3 credit hours; solo instructor and course director.

Appendix I Curricula Vitae of BIMS Faculty and Staff Members
2008, 2009, 2010 Fall semesters, Mammalian Functional Neuroanatomy (VIBS 450), stack-up with graduate Neuroanatomy (VIBS 603); 4 credit hours; solo instructor and course director for VIBS 450 (100% effort), and 80% effort for VIBS 603.

REFERRED PAPERS 2005-2010: (LAST 5 YEARS)
[This paper was selected for the August 1st, 2010 issue of Virtual Journal of Biological Physics Research by the American Physical Society and the American Institute of Physics in cooperation with numerous other societies and publishers. The Virtual Journal is an edited compilation of links to articles covering a focused area of frontier research.]
[Shi, L. and Ko, G.Y.-P. (corresponding author) submitted and published the full length nucleotide sequence of chicken (Gallus gallus) retinoschisin (rs1) in the Genbank database that was published in the article listed above. The Genbank accession number is EU924185. September, 2008.]
**Book Chapters:**

**CURRENT EXTERNAL SUPPORT:**
CURRICULUM VITAE
Glen Arthur Laine, DVM

EDUCATION:

<table>
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<tr>
<td>BS</td>
<td>University of Louisiana</td>
<td>Microbiology</td>
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<td>1976</td>
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<tr>
<td>PhD</td>
<td>Texas A&amp;M University</td>
<td>Physiology and Biophysics</td>
<td>1979</td>
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PROFESSIONAL EXPERIENCE AND ACADEMIC APPOINTMENTS:

1974-1976 Graduate Teaching Assistant, Department of Physics, University of Louisiana, Lafayette, Louisiana

1976-1980 Graduate Research Assistant, Department of Medical Physiology, Texas A&M University-College of Medicine, College Station, Texas

1980-1983 Research Fellow – Biophysics, Microcirculation Research Institute, College Station, Texas

1980-Present Graduate Faculty Member, Texas A&M University, College Station, TX

1983-1985 Research Fellow - Critical Care Medicine, Department of Anesthesiology, University of Texas Medical School, Houston, Texas

1983-Present Graduate Faculty Member, University of Texas Medical School, Houston, Texas

1985-1988 Assistant Professor, Department of Anesthesiology, University of Texas Medical School, Houston, Texas

1985-2001 Director, Center for Microvascular and Lymphatic Studies, University of Texas Medical School, Houston, Texas

1988-1991 Associate Professor, Departments of Anesthesiology and Pharmacology, University of Texas Medical School, Houston, Texas

1992-Present Professor and Head, Department of Physiology and Pharmacology, Director, Cardiovascular Physiology and Applied Physics - Texas Engineering Experiment Station, Texas A&M University, College Station, Texas

1999-Present Director, Michael E. DeBakey Institute for Comparative Cardiovascular Science and Biomedical Devices, Texas A&M University, College Station, TX

2005-2010 Associate Dean for Graduate Studies, College of Vet. Medicine & Biomedical Sciences, Texas A&M University, College Station, TX

AWARDS AND HONORS:

Wiseman-Lewie-Worth Endowed Chair in Cardiology
Resident Fellow-Texas Higher Education Coordinating Board
Distinguished Achievement Award in Research, Texas A&M University
Director, Center for Microvascular and Lymphatic Studies Texas Medical Center Fellow, Cardiovascular Section, American Physiological Society
Coordinator of Research, Halboughty Endowment for Cardiovascular Science, Texas A&M University
Established Investigator of the American Heart Association
Research Career Development Award, National Heart, Lung and Blood Institute
Upjohn Cardiovascular Investigator Award, International Society for Heart Research
Lamport Microvascular Investigator Award, Microcirculatory Society
Faculty Teaching Recognition Award, University of Texas Medical School-Houston
Diversity Award, Texas A&M University College Level
Department of Defense - Pro Patria Award
Gordon Conference - Invited Speaker
Phi Eta Sigma - National Honor Society
Pi Mu Epsilon - National Mathematics Honor Society
Phi Zeta – National Veterinary Medical Honor Society

TEACHING EXPERIENCE:
Microbiology    Physics
-Microbial Physiology   - Radiation biophysics
-Virology   - Medical physics
-Parasitology   - Introduction to classical physics
-Labs   - Laboratories

REFEREED PAPERS:


CURRENT EXTERNAL SUPPORT:

2006-2011 Mechanisms of Reperfusion – Induced Endothelial Injury. NIH – RO1-NHLBI-077566, Co-Investigator, $1,775,625

2006-2011 Biologists and Engineers Advancing Research. NIH-R25 NHLBI-084667, Co-Principal Investigator, $473,270

2007-2010 Bioengineering, Bioinformatics Institute. NSF-EEC-0609395. Co-Investigator, $600,000

2007-2012 Role of Cytokine-Induced Inflammation in Endothelial Dysfunction in Diabetes. NIH – RO1-NHLBI-085119. Co-Investigator, $1, 620,440

2009-2011 Short-term mesenteric lymphatic adaptation to trauma-related intestinal edema. NIH-RO1-NHLBI-092916. Co-Investigator, $695,000
EDUCATION:

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<td>BS</td>
<td>Texas A&amp;M University</td>
<td>Wildlife and Fisheries Science</td>
<td>1982</td>
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<td>With a Teaching Certificate</td>
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<tr>
<td>Med</td>
<td>Texas A&amp;M University</td>
<td>Curriculum and Instruction</td>
<td>1984</td>
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<tr>
<td>PhD</td>
<td>Texas A&amp;M University</td>
<td>Educational Administration: Higher</td>
<td>1992</td>
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PROFESSIONAL EXPERIENCE AND ACADEMIC APPOINTMENTS:

2006-present    Assistant Dean – Biomedical Sciences, Texas A&M University
1999-present    Director – Biomedical Science Program, Texas A&M University
1992-1999       Director – Student Financial Aid, Tarleton State University
1991-1992       Student Records Officer, Tarleton State University
1987-1990       Assistant Area Coordinator, Texas A&M University
1985-1987       Senior Financial Aid Counselor, Texas A&M University
1985-1985       Industrial Security Assistant, General Dynamics
1984-1984       Academic Advisor – Graduate Assistant, Texas A&M University

AWARDS AND HONORS:

Board of Directors for Texas Guaranteed Student Loan Corporation, Member, 2005-2011
TAMU Academic Operations Committee (AOC), 1999-present
TAMU Faculty Advisory Committee to the Vice President for Student Affairs, 1999-present
BIMS Executive Committee, 1999-present
BIMS Finalist for State of Texas Star Awards (for Diversity) – 2001
CURRICULUM VITAE
Linda Logan, DVM, PhD

EDUCATION:

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<tr>
<td>BS</td>
<td>Texas Tech University</td>
<td>Zoology</td>
<td>1971</td>
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<tr>
<td>MS</td>
<td>University of Georgia</td>
<td>Veterinary Parasitology</td>
<td>1973</td>
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<tr>
<td>DVM</td>
<td>Texas A&amp;M University</td>
<td>Veterinary Medicine</td>
<td>1976</td>
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<td>PhD</td>
<td>University of California</td>
<td>Comparative Pathology</td>
<td>1987</td>
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PROFESSIONAL EXPERIENCE AND ACADEMIC APPOINTMENTS:

2010 – Present  Professor and Head, Department of Veterinary Pathology, College of Veterinary Medicine, Texas A&M University, College Station, Texas

2009  APHIS Senior Attaché for Africa and Middle East, United States Department of Agriculture, Animal Plant Health Inspection Service – International Service, Embassy of the United States of America, Dakar, Senegal


2003 - 2004  Clinical Professor, Department of Veterinary Pathology, College of Veterinary Medicine, Texas A&M University, College Station, Texas 77843-4467


2000 – 2002  Executive Director, Texas Animal Health Commission, Austin, Texas


1987 – 1995  Scientist, Veterinary Pathologist, ILRAD, Nairobi, Kenya


1978 – 1980  Assistant Professor, Texas Agricultural Experiment, Station, College Station, Texas

1977 – 1980  Veterinary Parasitologist, Texas A&M University, Contract, Tsetse Trypanosomiasis Research and Training Project, Bamako, Mali

1976 – 1977  Research Associate, Institute of Tropical Veterinary Medicine, Texas A&M University, College Station, Texas

1974 – 1976  Laboratory Assistant, Department of Veterinary Parasitology, College of Veterinary Medicine, Texas A&M University, College Station, Texas

1972 – 1973  Graduate Research Assistantship, Department of Veterinary Parasitology, College of Veterinary Medicine, University of Georgia, Athens, Georgia

1971  Teaching eighth grade mathematics and science to my sister in Zaria, Nigeria

1971  Voluntary work and research in the Department of Veterinary Parasitology, College of Veterinary Medicine, Ahmadu Bello University, Zaria, Nigeria
CURRICULUM VITAE
Blanca Lupiani, PhD, DVM

EDUCATION:

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<tr>
<td>BS</td>
<td>University of Santiago de Compostela, Molecular Biology</td>
<td>Spain</td>
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<tr>
<td>MS</td>
<td>University of Santiago de Compostela, Microbiology</td>
<td>Spain</td>
<td>1989</td>
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<td>PhD</td>
<td>University of Maryland, College Park, Molecular Virology</td>
<td>MD</td>
<td>1994</td>
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PROFESSIONAL EXPERIENCE AND ACADEMIC APPOINTMENTS:
2000-Present  Member American society for Virology
2007-Present  Member American Association of Avian Pathologists
2008-Present  Editorial Board Avian Diseases

AWARDS AND HONORS:
1991-1994  Fulbright Predoctoral Fellow, University of Maryland, College Park, MD.

TEACHING EXPERIENCE:
2002-2008  Assistant Professor. Department of Veterinary Pathobiology (College of Veterinary Medicine and Biomedical Sciences), and Department of Poultry Science (College of Agriculture and Live Sciences) Texas A&M University, College Station, TX.
2008-Present  Associate Professor. Department of Veterinary Pathobiology (College of Veterinary Medicine and Biomedical Sciences), and Department of Poultry Science (College of Agriculture and Live Sciences) Texas A&M University, College Station, TX.

REFERREED PAPERS 2005-2010: (LAST 5 YEARS)
CURRICULUM VITAE
Thomas J. McDonald, PhD

EDUCATION:

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<th>Degree/Training</th>
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<tr>
<td>BS</td>
<td>Texas A&amp;M University</td>
<td>Marine Science</td>
<td>1980</td>
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<td>MS</td>
<td>Texas A&amp;M University</td>
<td>Chemical Oceanography</td>
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<tr>
<td>PhD</td>
<td>Texas A&amp;M University</td>
<td>Chemical Oceanography</td>
<td>1988</td>
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PROFESSIONAL EXPERIENCE AND ACADEMIC APPOINTMENTS:

2009-Present  Interim Department Head, Environmental and Occupational Health, Health Science Center, School of Rural Public Health, Texas A&M System
2006-Present  Associate Professor, Health Science Center, School of Rural Public Health, Texas A&M System
2005-2006     Assistant Professor, Health Science Center, School of Rural Public Health, Texas A&M System
2001-2005     Lecturer, Health Science Center, School of Rural Public Health, Texas A&M University System
1998-2002     TEES Associate Research Scientist, Department of Civil Engineering, Texas A&M University
1996-Present  Senior Project Manager, TDI-BI.
1996-1998     TEES Assistant Research Scientist, Department of Civil Engineering, Texas A&M University
1993-1996     Manager, Mass Spectrometry Group, Geochemical and Environmental Research Group, Texas A&M University
1989-1996     Assistant Research Scientist, Geochemical and Environmental Research Group, Texas A&M University
1988-1989     Post-Doctoral Research Associate, Geochemical and Environmental Research Group, Texas A&M University
1984-1988     Research Assistant, Department of Oceanography, Texas A&M University

AWARDS AND HONORS:
Outstanding Graduate Student Award - Division of Environmental Chemistry, American Chemical Society 1988.

TEACHING EXPERIENCE:
VIBS 432, Public Health Practices
REFERREED PAPERS 2005-2010: (LAST 5 YEARS)


CURRENT EXTERNAL SUPPORT:
NOAA NS&T Mussel Watch Project, Field sampling, analysis and interpretation of environmental data, October 2009 – Oct.2014, ~$0.5 million/year. (Co-PI)
CDC/ATSDR/DHHS. Border Health and Toxicology Educational Research Program. 9/1/2009 – 8/31/2012. $250,000/year. (PI)
DHHS-HRSA. Public Health Traineeship Program. 7/1/09 - 6/30/11. $18,000/year (PI)
DHHS-HRSA. Public Health Traineeship Program. 9/1/09 – 8/30/12. $35,000 (total) (PI)
EDUCATION:

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<td>BS</td>
<td>Illinois State University</td>
<td>Biology</td>
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<td>PhD</td>
<td>The University of Tulsa</td>
<td>Biological Sciences</td>
<td>1997</td>
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PROFESSIONAL EXPERIENCE AND ACADEMIC APPOINTMENTS:

2004-present  Associate Professor, Dept. of Veterinary Integrative Biosciences, College of Veterinary Medicine and Biomedical Sciences, (tenured in 2008) Texas A&M University, College Station, Texas 77843-4458, Faculty of Genetics / Faculty of Ecology and Evolutionary Biology,

2003-2004  Senior Scientist, SAIC-Frederick, Inc., Laboratory of Genomic Diversity, NCI-Frederick, NIH

1999-2003  Research Fellow, Laboratory of Genomic Diversity, NCI-Frederick, NIH

1997-1999  IRTA Post-doctoral fellow, Laboratory of Genomic Diversity, NCI-Frederick, NIH

AWARDS AND HONORS:

2010  Texas A&M University Association of Former Students Distinguished Achievement Award in Research

2009  JoAnn Treat Research Excellence Award, Texas A&M Research Foundation

2007  Pfizer Animal Health Award for Research Excellence

2001-2002  National Institutes of Health Loan Repayment Program Recipient

TEACHING EXPERIENCE:

GENE 320
BIMS 320
VIBS 485
BIMS 491

REFERREED PAPERS 2005-2010: (LAST 5 YEARS)


2. Davis, B.W., Li, G., and W.J. Murphy. 2010. Reconciling the evolutionary radiation of the big cats (Panthera) using a Y chromosome supermatrix and a critical reanalysis of mitochondrial DNA. Molecular Phylogenetics and Evolution. 56: 64-76.


CURRENT EXTERNAL SUPPORT:

- “Resolving Mammalian Phylogeny Using Genomic and Morphological Approaches”, National Science Foundation, $600,000, October 2006-September 2011. (PI, with co-PIs R.L. Honeycutt, T. Williams, and J. Bickham); $15,000 in REU Supplements, 2008 & 2010.
- “Genetic Analysis of Snow Leopard Populations”, Snow Leopard Conservancy. $24,000, September 2006-2010. (PI with co-PI J. Janecka)
- “Genetic Analysis of Snow Leopard Populations”, Snow Leopard Network. $6,400, March 2009-February 2010. (co-PI with P J. Janecka)
## CURRICULUM VITAE

Jeffrey MB Musser, PhD, DVM

### EDUCATION:

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<td>BS</td>
<td>Frostburg State College, Frostburg, MD</td>
<td>Biology</td>
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<td>DVM</td>
<td>VA Tech, Blacksburg, VA</td>
<td>Veterinary Medicine</td>
<td>1989</td>
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<td>PhD</td>
<td>North Carolina State University, Raleigh, NC</td>
<td>Pharmacology</td>
<td>2000</td>
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### PROFESSIONAL EXPERIENCE AND ACADEMIC APPOINTMENTS:

- **1998-2000** Fellowship, American Association for the Advancement of Science Science and Technology Policy Fellowship, Livestock Advisor U.S. Agency for International Development, Washington, DC
- **2000-2001** Lecturer, Department of Veterinary Pathobiology, College of Veterinary Medicine, TAMU
- **2001- Present** National Animal Health Emergency Response Corps, USDA/APHIS/Veterinary Services
- **2001 - 2009** Clinical Assistant Professor, Department of Veterinary Pathobiology, College of Veterinary Medicine, TAMU
- **2006 - Present** Adjunct Assistant Professor, Animal Science Department, Bunda College of Agriculture, University of Malawi
- **2009 - Present** Clinical Associate Professor, Department of Veterinary Pathobiology, College of Veterinary Medicine, TAMU
- **1998** Diplomate, American Board of Veterinary Practitioners, Dairy Specialty
- **2001- present** National Animal Health Emergency Response Corps, USDA/APHIS/Veterinary Services
- **2003** Phi Beta Delta, Honor Society for International Scholars
- **2005** USDA/ARS and USDA/CSREES National Animal Health Program Planning Advisory Workshop
- **2006 - present** Adjunct Assistant Professor, Animal Science Department, Bunda College of Agriculture, University of Malawi
- **2008** Recertification - American Board of Veterinary Practitioners, Dairy specialty

### AWARDS AND HONORS:

- **2002** Certificate of Appreciation, U.S.D.A. Hurricane Mitch/Georges Reconstruction Project in Central America and the Caribbean
- **2002** U.S.D.A. Secretary’s Honor Award, for outstanding and dedicated efforts in responding to the Foot-and-mouth Disease outbreak
- **2003** Montague Teaching Excellence Award, Center for Teaching Excellence Scholar, College of Veterinary Medicine, Texas A&M University
- **2005** Texas Veterinary Medical Association Research Award
- **2007** International Excellence Award, Texas A&M University
TEACHING EXPERIENCE:
Great Diseases of the World  VTPB 221-500  2011 - Spring
2010 – Fall, Spring
2009 – Fall, Summer, Spring
2008 – Fall, Spring
2007 – Fall, Summer, Spring
2006 – Fall, Summer, Spring
2005 – Fall, Summer, Spring

Great Diseases of the World, Honors  VTPB 221-200
VTPB 221-201  2009 – Fall
2007 – Fall
2006 – Fall
2005 – Fall

History of Medicine  BIMS 489  Summer 2007, 2006

Directed Studies:
Introduction to German culture and language  VTPB 485  Summer 2007, 2006

Honors Undergraduate research:
Ozone therapy for mastitis  VTPB 485  Spring 2006

REFERREED PAPERS 2005-2010: (LAST 5 YEARS)
CURRICULUM VITAE
Waithaka Mwangi, PhD

EDUCATION:

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<tr>
<td>BS</td>
<td>University of Nairobi, Kenya</td>
<td>Biochemistry and Parasitology</td>
<td>1990</td>
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<tr>
<td>PhD</td>
<td>Washington State University</td>
<td>Immunology</td>
<td>2002</td>
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PROFESSIONAL EXPERIENCE AND ACADEMIC APPOINTMENTS:

1990 - 1996 Research Associate, International Livestock Research Institute (ILRI), Nairobi, Kenya
1997 - 2002 Graduate Research Assistant, Department of Veterinary Microbiology and Pathology, Washington State University
2002 - 2004 Post-Doctoral Research Fellow, Department of Veterinary Microbiology and Pathology, Washington State University
2004 - 2005 Assistant Professor (non-tenure track) and Graduate Faculty, Department of Veterinary Microbiology and Pathology, Washington State University
2005 - present Assistant Professor (tenure-track) and Graduate Faculty, Department of Veterinary Pathobiology, Texas A&M University
2006 - present Faculty, NIH/Life Sciences Training T32 Grant (Mechanistic Studies at the Host Pathogen Interface), The Texas A&M University System
2007 - present Faculty, The Center for Microencapsulation and Drug Delivery, The Texas A&M University System

AWARDS AND HONORS:

1998-present Phi Kappa Phi Honor Society
2003-2004 NIH Immunology Training Grant (Ruth L. Kirschstein National Research Service Award
2004 American Association of Veterinary Immunologists (AAVI) Travel Award for the 7th International Veterinary Immunology Symposium in Quebec, Canada
2006 American Association of Immunologists (AAI) Travel Award for the 2006 Annual Meeting in Boston, MA
2007 American Association of Immunologists Travel Award for the 2007 Annual Meeting in Miami, FL

TEACHING EXPERIENCE:

REFERREED PAPERS 2005-2010: (LAST 5 YEARS)

3. Erika Silva-Campa1, Lilian Flores-Mendoza1, Mónica Reséndiz1, Araceli Pinelli-Saavedra1, Verónica Mata-Haro1, Waithaka Mwangi2, Jesús Hernández1*. 2009. Induction of T helper 3 regulatory cells by


CURRENT EXTERNAL SUPPORT:
Improving vaccine efficacy by directed priming of CD4+ and CD8+ T lymphocytes (PI). 09/01/05-08/31/09
Priming bovine viral diarrhea virus-specific adaptive immunity in neonatal calves (PI). 09/01/2008-08/31/2011
Development of a Novel Vaccine against Clostridium perfringens. (co-PI). 09/01/2008-08/31/2011
Enhancing avian influenza vaccine efficacy using Toll-like Receptor Ligands for rapid induction of immune response. (co-PI). 01/01/2008-12/31/2009
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<td>MD</td>
<td>Ain Shams University</td>
<td>Human Medicine</td>
<td>1977</td>
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<td>Cairo, Egypt</td>
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<td>PhD</td>
<td>Texas A&amp;M University</td>
<td>Microbiology</td>
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PROFESSIONAL EXPERIENCE AND ACADEMIC APPOINTMENTS:

2008 – Present  Clinical Assistant Professor, Department of Veterinary Pathobiology, Texas A&M University, College Station, Texas

2003-2008  Senior Lecturer, Department of Veterinary Pathobiology, Texas A&M University, College Station, Texas

1999-2003  Lecturer, Department of Veterinary Pathobiology, Texas A&M University, College Station, Texas

1997-1999  NIH Postdoctoral Research Fellow, Division of Rheumatology, University of Connecticut Health Center, Connecticut

1996-1997  Lecturer, Department of Veterinary Pathobiology, Texas A&M University, College Station, Texas

1995-1996  Instructor/Postdoctoral Research Associate, Department of Veterinary Anatomy & Public Health, Texas A&M University, College Station, Texas

1993-1995  Teaching Assistant, Department of Veterinary Microbiology, Texas A&M University, College Station, Texas

1984-1993  Research Associate, Department of Veterinary Microbiology, Texas A&M University, College Station, Texas

1982-1982  Visiting Resident, Department of Cardiothoracic Anesthesia, Cleveland Clinic Foundation, Cleveland, Ohio

1978-1979  Post Operative Specialist Resident, Department of Cardiothoracic Anesthesia, Cleveland Clinic Foundation, Cleveland, Ohio

1978-1979  Rotating Internship, Ain Shams University Hospitals, Cairo Egypt

AWARDS AND HONORS:

Pathology(Undergraduate), Faculty of Medicine, Ain Shams University, 1974
On Graduation, Faculty of Medicine, Ain Shams University, 1977

TEACHING EXPERIENCE:

Veterinary Pathobiology 221: Great Diseases of the World (3 credits; 45 contact hours) Fall & Spring Semesters

Veterinary Pathobiology 405: Biomedical Microbiology (5 credits; 75 contact hours) 10 Week Summer

Veterinary Pathobiology 407: Advanced Veterinary Microbiology Laboratory (3 credits; 45 hours) Fall & Spring Semesters

Veterinary Pathobiology 409: Introduction to Immunology (3 credits; 45 contact hours) Fall & Spring Semesters
REFERREED PAPERS 2005-2010: (LAST 5 YEARS)


**Book Chapters:**


CURRICULUM VITAE
Susan L. Payne, PhD

EDUCATION:

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<tr>
<td>BS</td>
<td>Southeastern Massachusetts University (Univ. of Massachusetts at North Dartmouth), North Dartmouth, MA</td>
<td>Marine Science</td>
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<tr>
<td>PhD</td>
<td>Louisiana State University, Baton Rouge, LA</td>
<td>Microbiology</td>
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PROFESSIONAL EXPERIENCE AND ACADEMIC APPOINTMENTS:

1983-1988  Postdoctoral Research Associate. Department of Biochemistry, LSU, Baton Rouge, LA
1988-1996  Assistant Professor of Molecular Biology and Microbiology. Case Western Reserve University School of Medicine, Cleveland, OH
1990-1996  Assistant Professor of General Medical Sciences. Case Western Reserve University School of Medicine, Cleveland, OH
1989-1996  Member, Case Western Reserve University Cancer Center
1993-1996  Member, Virology Working Group, Case Western Reserve University Center for AIDS Research
1993-1996  Member, Case Western Reserve University Virology Program
1996-1999  Assistant Professor of Biology. The University of Texas at Arlington
1999-2002  Associate Professor of Biology. The University of Texas at Arlington
2000-2002  Associate Chair of Biology. The University of Texas at Arlington
1996-2001  Radiation Safety Committee Member, The University of Texas at Arlington
2001      Chair, Radiation Safety Committee, The University of Texas at Arlington
2002-Present  Associate Professor, Department of Veterinary Pathobiology, Texas A&M University
2002-Present  Member, Intercollegiate Faculty of Genetics, Texas A&M University
2002-Present  Member, Intercollegiate Faculty of Virology, Texas A&M University
2006      Telephone reviewer, 2 grants, National Institutes of Health (AIDS immunology and Pathogenesis Study Section). October 2005. Telephone reviewer, 1 grant, National Institutes of Health (NCI Initial review Group subcommittee I).
2006-2009  Institutional Biosafety Committee, Texas A&M University
2007-Present  Member, Graduate Faculty of TAMU Health Science Center Graduate School of Biomedical Sciences
2007-2008  Interim Biosafety Officer, Texas A&M University
2008-Present  Associate Professor with Tenure, Veterinary Pathobiology, Texas A&M University
2009      Panel member USDA Animal Protection Review panel C.

TEACHING EXPERIENCE:

BIMS101 Career Seminar  1 semester
VTPB405 Intro to Biomedical Microbiology  1 semester
VTPB438. Biomedical Virology  5 semesters
VTMI647. Virology  3 semesters (6 lecture hours)
VTMI 689 Viral Vectors  2 semesters (3 lecture hours)
REFERRED PAPERS 2005-2010: (LAST 5 YEARS)

BOOK CHAPTERS:
CURRICULUM VITAE
Timothy D. Phillips, PhD

EDUCATION:

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<td>BS</td>
<td>Mississippi State University</td>
<td>Gen. Science</td>
<td>1970</td>
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<td>MS</td>
<td>Univ. of Southern Mississippi</td>
<td>Sci.Ed./Chemistry</td>
<td>1972</td>
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<td>Univ. of Southern Mississippi</td>
<td>Chemistry</td>
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PROFESSIONAL EXPERIENCE AND ACADEMIC APPOINTMENTS:

2009-present Joint Professor, Environ & Occupational Hlth (Hlth Science Center, TAMU)
2005-present Adjunct Professor, Texas Tech University (TIEHH, Lubbock, TX)
2001-2006 Director, Center for Food Safety (IFSE, Texas A&M University)
2001-2006 Chair, Faculty of Toxicology (Texas A&M University)
1990-present Professor, Faculty of Toxicology (Texas A&M University)
1990-present Professor, Veterinary Integrative Biosciences (Texas A&M University)
1990-present Professor, Faculty of Food Science (Texas A&M University)
1986-1990 Professor, Texas A&M University (Veterinary Medicine), Food Science and Technology
1982-2003 Adjunct Professor, University of Texas, Galveston & Texas Tech University, Lubbock
1982-1986 Associate Professor, Texas A&M University (Veterinary Medicine)
1979-1981 Assistant Professor, Texas A&M University (Veterinary Medicine), Food Science and Technology
1977-1979 Research Associate, University of Mississippi Medical Center, Medical Pharmacology and Toxicology
1975-1976 Robert A. Welch Fellow, Baylor College of Medicine, Houston
1972-1975 N.D.E.A. Fellow, University of Southern Mississippi, Department of Chemistry
1971-1972 N.D.E.A. Fellow, University of Southern Mississippi, Science Ed (Chemistry)

AWARDS AND HONORS:
Fellow, Academy of Toxicological Sciences (January 10, 2000 - present)
Presentation on NS clay to the “Gates Foundation” (aflatoxin convening in Seattle), 2010
National Sigma Xi Award for Innovation (Walston Chubb), 2009
Chevron Lecturer in Chemistry award, Rudder Theater, 2008
Texas AgriLife (TAES) Senior Faculty Fellow’s Distinction, 2008
Texas A&M System Innovation Award for Research, 2007
Texas A&M University Distinguished Achievement in Research, 2006
Bush Award for Excellence in International Research, 2005
Sigma Xi Distinguished Scientist Award, TAMU, 2003
National BIFAD Award for Scientific Excellence, Presented on Capitol Hill, 2002
Faculty Fellow Distinction, TAES, 2002
Pfizer Award for Excellence in Research, 1998
SmithKline Beecham Award for Research, 1993
Engelhard Achievement Award for the Discovery of Novasil™, 1989
TAMU Faculty Distinguished Achievement Award in Research, 1988
Texas A&M University System Award in Research, 1986
Faculty Achievement Award in Research (TVMA), 1985
FAO JECFA Expert Panel, Food Contaminants and Natural Toxicants, 2007-2011
TEACHING EXPERIENCE:
VIBS 404, Food Toxicology & Safety

REFEREED PAPERS:


CURRENT EXTERNAL SUPPORT:

USAID (Peanut CRSP) Phillips (PI) 04/01/08-03/31/12
USAID-AlO $180,000/yr
Enterosorbent intervention therapies for populations at risk for aflatoxin-related diseases
The major goal of this research is to confirm the safety of NovaSil and determine its ability to reduce foodborne exposure to aflatoxins in humans through food delivery and flavored powder.
Role: PI

TAES 402905-98 Phillips (PI) Recurrent funding and royalties
BASF Chemical Corporation $60,000/yr
Development of enterosorbents for mycotoxins
The major goal of this research is to prioritize sorption methods for the detoxification of mycotoxins in food and water (RENEWED in 2008, $60k direct/year).
Role: PI

NHARP (010366-0025-2009) Phillips (Co-PI) 09/01/10-08/31/12
ARP, Texas $35,845/year
ARP Funding (Texas)
Developing Predictive Toxicity Models using Nanomaterial Structure-Activity Relationships
Role: Co-PI (Awarded, May, 2010)

NIH/NCMHD RO1-MD00519-01 Phillips (PI) 09/01/10-08/31/14 (FUNDED, Sept, 2010)
DHHS/PHS/NIH $250,000/yr
Prevention of hepatocellular carcinoma in vulnerable communities in Texas
The major goal of this research is to provide clay-based dietary therapies that will improve liver cancer management in high risk (and underserved) populations by reducing exposure to aflatoxins, $1,000,000
Role: PI

TAMU/Mexico $25,000/yr
Enterosorbent applications to reduce food-borne exposure to mercury and aflatoxins in cultured fish
The major goal of this research is to investigate the ability of an amended clay to bind Hg and aflatoxins and prevent in cultured fish and prevent their adverse effects.
Role: Co-PI (with Dr. Civera, Mexico)
CURRICULUM VITAE
Michelle Pine, PhD, DVM

EDUCATION:

<table>
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<th>Field</th>
<th>Year</th>
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<tr>
<td>BS</td>
<td>University of Missouri-Columbia</td>
<td>Animal Science</td>
<td>1987</td>
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<tr>
<td>DVM</td>
<td>University of Missouri-Columbia</td>
<td>Veterinary Medicine</td>
<td>1991</td>
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<tr>
<td>PhD</td>
<td>Texas A&amp;M University</td>
<td>Toxicology</td>
<td>2002</td>
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</table>

PROFESSIONAL EXPERIENCE AND ACADEMIC APPOINTMENTS:

2004-2006 Research Assistant Professor, Veterinary Integrative Biosciences, Texas A&M University
2006-Present Clinical Assistant Professor, Veterinary Integrative Biosciences, Texas A&M University
2006-Present Faculty of Neurosciences, Texas A&M University
2007-Present Interdisciplinary Faculty of Toxicology, Texas A&M University

AWARDS AND HONORS:
Certificate of Merit, United States Department of Agriculture, 1998
Regents Graduate Fellow, Texas A&M University, 1998

TEACHING EXPERIENCE:
Biomedical Anatomy 305 (4 credits; 6 contact hours) Fall/Spring 2008, Spring 2009

REFERREED PAPERS 2005-2010: (LAST 5 YEARS)
**Named the 2006 Best Reproductive Toxicology Publication of the Year by the European Society of Teratology.


11. Brian Laffin, Marco Chavez, and Michelle Pine. 2009. The pyrethroid metabolites 3-phenoxybenzoic acid and 3-phenoxybenzyl alcohol do not exhibit estrogenic activity in the MCF-7 human breast carcinoma cell line or Sprague-Dawley rats. Toxicology (accepted for publication).

**CURRENT EXTERNAL SUPPORT:**

2010-2011 Texas AgriLife Research Vector-Borne Disease Program

“Vector Eradication: Delivery of Novel Pesticide Encapsulated Nanoparticles”

$100,000 total award.

PI: Michelle Pine

Co-PIs: Christie Sayes, Patricia Pietrantonio, and Brian Porter
**CURRICULUM VITAE**  
Balaji Ramanathan, PhD

### EDUCATION:

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<tr>
<td>BVSc</td>
<td>Tamil Nadu Veterinary and Animal Sciences University</td>
<td>Veterinary Medicine</td>
<td>1996</td>
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<tr>
<td>MS</td>
<td>Kansas State University</td>
<td>Immunology</td>
<td>1999</td>
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<tr>
<td>PhD</td>
<td>Kansas State University</td>
<td>Immunology</td>
<td>2004</td>
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### PROFESSIONAL EXPERIENCE AND ACADEMIC APPOINTMENTS:

- **2009-Present**  
  Clinical Assistant Professor, VIBS, Texas A&M University, College Station, TX, USA

- **2006-2009**  
  Assistant Professor, Dept Biomedical Sciences, Atlantic Veterinary College, University of Prince Edward Island, Charlottetown, PE, Canada.

- **2008-Present**  
  Member, Editorial board, Journal - Probiotics and Antimicrobial Proteins Elsevier Publications

- **2007-2009**  
  Program Leader/Lead Investigator, Cancer Research Program, Atlantic center for comparative biomedical research (ACCBR), UPEI, Charlottetown, PE, Canada.

- **2009-Present**  
  Adjunct faculty, School of Veterinary Medicine, St. Matthew’s University, Cayman Islands, BWI.

- **2007-2009**  
  Adjunct faculty, Dept Microbiology and Immunology, Dalhousie University, Halifax, NS, Canada.

- **2007-Present**  
  Corresponding secretary, American association of veterinary anatomists.

- **2005-Present**  
  Administrator and Founder, Yale Bioforum, Yale University School of Medicine, CT, USA.

- **2005-2006**  
  Online director, Yale Journal of Biology and Medicine, Yale University School of Medicine, CT, USA.

- **2004-2006**  
  Post-Doctural Associate, Department of Immunobiology, Yale University School of Medicine, CT, USA.

- **1999-2004**  
  Graduate Research and Teaching Assistant, Department of Anatomy and Physiology, KSU, Manhattan. Instructor- Gross Anatomy 700 Involved in various gene regulatory and recombinant DNA studies.

- **1997-1999**  
  Graduate Research and Teaching Assistant, Department of Animal Sciences and Industry, KSU, Manhattan. Genetics 500, Farm animal reproduction Involved in primary cell culture and cytokine assays.

### AWARDS AND HONORS:

- Federal Tri-Council funding - NSERC Discovery grant, $150,000; 5 yrs: 2008-2013
- Junior mentorship travel award, NCIC, Jan 2008
- AVC Internal grant research award, March, 2007
- PEI HRI – Grant development support award, March, 2007
- SCENT – Instructional development award, Oct, 2007
- Junior mentorship travel award, CIHR, Oct, 2007
- Albert L. Burroughs Memorial Graduate Student Assistantship Award, 2000 & 2002
TEACHING EXPERIENCE:
VIBS 305 – Biomedical Anatomy
VIBS 485 – Directed Studies

REFERREED PAPERS 2005-2010: (LAST 5 YEARS)

Book Chapters:

CURRICULUM VITAE
Terje Raudsepp, PhD

EDUCATION:

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<tr>
<td>BS/MSc</td>
<td>Tartu University, Estonia</td>
<td>Genetics &amp; Cytology</td>
<td>1982</td>
</tr>
<tr>
<td>PhD</td>
<td>The Swedish University of Agricultural Sciences</td>
<td>Molecular Genetics</td>
<td>1999</td>
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</table>

PROFESSIONAL EXPERIENCE AND ACADEMIC APPOINTMENTS:

2005- to present  Assistant Professor, Department of Veterinary Integrative Biosciences (VIBS), Texas A&M University, College Station, Texas, USA.
2001-2005         Assistant Research Scientist, Department of Veterinary Anatomy & Public Health, Texas A&M University, College Station, Texas, USA.
1999-2001         Assistant Research Professor, Department of Animal Breeding and Genetics, The Royal Veterinary & Agricultural University, Copenhagen, Denmark.
1999             Guest Scientist, Department of Animal Breeding and Genetics, The Royal Veterinary & Agricultural University, Copenhagen, Denmark (Recipient of NorFA scholarship for three months).
1995-1999         Department of Animal Breeding and Genetics, Swedish University of Agricultural Sciences, Uppsala, Sweden (Recipient of the Swedish Institute’s International scholarship for two years).
1994-1995         Research Associate, Laboratory of Molecular Genetics, Institute of Chemical & Biophysics, Estonian Academy of Sciences, Tallinn, Estonia.

AWARDS AND HONORS:

Helsinki University (Finland) Scholarship Award, August 1994. (Project: Fluorescent in situ hybridization on human metaphase chromosomes).
1996 Winner of the Nature Genetics and Nature Best Poster Award, Human Genome Meeting (HGM 96), March 22-24, 1996, Heidelberg, Germany.
Cold Spring Harbor Laboratory (USA) Travel Award, March 2003. (Course: Aquiring and Analyzing Genomic Sequence Data).
Texas A&M, Veterinary Integrative Biosciences Travel Award, April 2009. Visiting Drs. P. Hunt & T. Hassold Laboratory at Washington State University, Pullman, WA, April 5-11. (Learning techniques for the analysis of chromosomes in male and female meiosis).
2010-2011 Montague Center for Teaching Excellence Scholar.

TEACHING EXPERIENCE:

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<th>Course Title</th>
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<td>100</td>
<td>Fall 2007</td>
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REFERREED PAPERS:


8. Das, P.J., Chowdhary, B.P., **Raudsepp, T**. 2009. Characterization of the bovine pseudoautosomal region (PAR) and comparison with sheep, goat and other mammalian PARs. Cytogenet. Genome Res., 126, 139-147.


**CURRENT EXTERNAL SUPPORT:**

2009 Principal Investigator, American Quarter Horse Foundation (AQHF), *Discovering genetic causes of acrosomal dysfunction in stallions*, October 2009-September 2010, $50,000.

2009 Principal Investigator, Morris Animal Foundation, D09LA-004, *Generation of an integrated physical map for the alpaca genome*, 10/01/09-9/31/12, $155,527.


2010 Principal Investigator, American Quarter Horse Foundation (AQHF), *Discovering genetic causes of acrosomal dysfunction in stallions*, October 2010-September 2011, $58,160.

2010 Principal Investigator, FY10 PUF Texas AgriLife Research FY10, *Design and fabrication of a fine-tiling comparative genomic hybridization (CGH) array for the horse genome*, $45,359.

CURRICULUM VITAE
Sanjay M. Reddy, PhD

EDUCATION:

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<tr>
<td>BVSc</td>
<td>Andhra Pradesh Agricultural University, India</td>
<td>Veterinary Medicine</td>
<td>1986</td>
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<tr>
<td>MS</td>
<td>University of Maryland College Park, MD</td>
<td>Virology</td>
<td>1989</td>
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<tr>
<td>PhD</td>
<td>University of Maryland College Park, MD</td>
<td>Molecular Virology</td>
<td>1994</td>
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PROFESSIONAL EXPERIENCE AND ACADEMIC APPOINTMENTS:

1988-1994 Research Assistant. VA-MD Regional College of Veterinary Medicine, University of Maryland, College Park, MD.
1994-1997 NIH fellowship, Laboratory of Clinical Investigation, National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, MD
1997-2002 Veterinary Medical Officer, Avian Disease and Oncology Laboratory, Agriculture Research Service, United States Department of Agriculture, East Lansing, MI.
2002-Present Associate Professor. Department of Veterinary Pathobiology, College of Veterinary Medicine, Texas A&M University, College Station, TX.

AWARDS AND HONORS:

1995-1997 Fogarty Intramural Research Training Award, NIH.
2001 Bayer-Snoeyenbos New Investigator Award

TEACHING EXPERIENCE:

VTPB 334, Poultry Diseases

REFEREED PAPERS:


CURRENT EXTERNAL SUPPORT:
2009-01623 Reddy (PI) 2010-2013, AFRI/NIFA/USDA, “Improving the safety and efficacy of Marek’s disease virus vaccine candidates expressing the Meq protein from CVI988 vaccine strain”.


2008-55204-18863 Lupiani (PI) 2008-2010, AICAP2/AFRI/NIFA/USDA, “Development of luminex and ELISA based immunoassay for the subtyping of sera from avian influenza (AI) infected chickens and turkeys”.


Appendix I Curricula Vitae of BIMS Faculty and Staff Members
CURRICULUM VITAE
Gonzalo Martin Rivera, DVM, PhD

EDUCATION:

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<th>Degree/Training</th>
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<tr>
<td>DVM</td>
<td>National University</td>
<td>Veterinary Medicine</td>
<td>1988</td>
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<td>Rio Cuarto, Argentina</td>
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<tr>
<td>MS</td>
<td>National University of Mar del Plata</td>
<td>Animal Science</td>
<td>1990</td>
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<td>Argentina</td>
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<tr>
<td>PhD</td>
<td>Cornell University</td>
<td>Physiology</td>
<td>2002</td>
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<td>Ithaca, New York</td>
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<tr>
<td>Postdoctoral</td>
<td>University of Connecticut Health Center</td>
<td>Genetics and Developmental Biology</td>
<td>2002-2005</td>
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<td>Farmington, Connecticut</td>
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PROFESSIONAL EXPERIENCE AND ACADEMIC APPOINTMENTS:

2008-Present  Assistant Professor, Department of Veterinary Pathobiology, Texas A&M University, College Station, Texas
2006-2008    Assistant Professor in Residence, Department of Genetics and Developmental Biology, University of Connecticut Health Center, Farmington, Connecticut
2002-2005    Postdoctoral Fellow, Department of Genetics and Developmental Biology, University of Connecticut Health Center, Farmington, Connecticut
1997-2002    Graduate Research Assistant, Department of Biomedical Sciences, Cornell University, Ithaca, New York
1993-1997    Instructor, Department of Animal Reproduction, National University of Rio Cuarto, Argentina
1991-1992    Fellow of the National Research Council (CONICET), Laboratory of Reproduction and Lactation, Mendoza, Argentina
1988-1990    Fellow of the National Research Council of Argentina (CONICET, Department of Animal Science, National Institute of Agricultural Technology (INTA), Balcarce, Argentina

AWARDS AND HONORS:
Fellowship, National Research Council (CONICET-Argentina), 1988-1991
Fellowship, National Research Council (CONICET-Argentina), 1991-1993
Fellowship, Fulbright Commission, 1997-1999
Graduate Research Assistantship, College of Veterinary Medicine, Cornell University, 1999-2002
Postdoctoral Fellowship, American Heart Association, 2003-2005

TEACHING EXPERIENCE:
Veterinary Pathobiology 485: Research projects

REFERREED PAPERS 2005-2010:
Requirement of Nck Adaptors for actin dynamics and cell migration stimulated by PDGF-B.
Proc. Natl. Acad. Sce. USA, 103:9536-41


CURRENT EXTERNAL SUPPORT:
Title: Regulation of cell motility by SH2/SH3 domain-containing adaptors
Agency: Scientist Development Grant, American Heart Association
Total Award Amt: Start-up funds
Award Period: 7/01/08-6/30/11
Person-months Committed per Year:
Role: PI
CURRICULUM VITAE
Lynn Ruoff, DVM

EDUCATION:

<table>
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<tr>
<th>Degree/Training</th>
<th>Conferring Institution</th>
<th>Field</th>
<th>Year</th>
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<tr>
<td>BS</td>
<td>Colorado State University</td>
<td>Veterinary Science</td>
<td>1973</td>
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<tr>
<td>DVM</td>
<td>Colorado State University</td>
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<td>1975</td>
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</table>

PROFESSIONAL EXPERIENCE AND ACADEMIC APPOINTMENTS:

1975-1976    Resident (anatomy) Colorado State University, Fort Collins, Colorado
1977-1979    Associate, Rio Grande Animal Clinic, Albuquerque, New Mexico
1982-1998    Lecturer, Department of Veterinary Anatomy and Public Health, Texas A&M University, College Station, TX 77843-4458
1998-2003    Senior Lecturer, Department of Veterinary Anatomy and Public Health, Texas A&M University, College Station, TX 77843-4458
2003-Present Clinical Associate Professor, Department of Veterinary Integrative Biosciences, Texas A&M University, College Station, TX 77843-4458

AWARDS AND HONORS:
Selected, Fish Camp Namesake, Texas A&M University, January, 1997
Selected, Faculty Distinguished Achievement Award, Texas A&M University, May, 1997

TEACHING EXPERIENCE:
Biomedical Anatomy (4 credits; 14 contact hours) Spring 2006-Summer 2009
CURRICULUM VITAE
Leon, H. Russell, PhD, DVM

EDUCATION:

<table>
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<tr>
<th>Degree/Training</th>
<th>Conferring Institution</th>
<th>Field</th>
<th>Year</th>
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<tbody>
<tr>
<td>BS</td>
<td>University of Missouri, Columbia, MO</td>
<td>Science</td>
<td>1953</td>
</tr>
<tr>
<td>DVM</td>
<td>University of Missouri, Columbia, MO</td>
<td>Veterinary Medicine</td>
<td>1956</td>
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<tr>
<td>MPH</td>
<td>Tulane University, New Orleans, LA</td>
<td>Epidemiology</td>
<td>1958</td>
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<tr>
<td>PhD</td>
<td>Texas A&amp;M University, College Station, TX</td>
<td>Veterinary Microbiology</td>
<td>1965</td>
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<tr>
<td>DS (Hon.)</td>
<td>University of Missouri, Columbia, MO</td>
<td>Science</td>
<td>2010</td>
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</table>

PROFESSIONAL EXPERIENCE AND ACADEMIC APPOINTMENTS:

1999-Present      Professor, Graduate Faculty of The Texas A&M University System Health Science Center, Graduate School of Biomedical Sciences.
1998-Present      Professor, Epidemiology and Biostatistics, School of Rural Public Health, Texas A&M Univ.
1996-Present      Professor, Toxicology, Texas A&M University, College Station, TX.
1969-Present      Professor, Veterinary Anatomy & Public Health / Veterinary Integrative Biosciences, Texas A&M University, College Station, TX.
1978-Present      Professor, Food Science and Technology, Texas A&M University, College Station, TX.
1977-Present      Professor, Medical Microbiology and Immunology, Texas A&M Univ., College Station, TX.
1976-1979         Professor, Veterinary Microbiology and Parasitology, Texas A&M Univ., College Station, TX.
1965-1969         Associate Professor, Veterinary Public Health, Texas A&M University, College Station, TX.
1959-1965         Assistant Professor, Veterinary Public Health, Texas A&M University, College Station, TX.

AWARDS AND HONORS:
Phi Tau Sigma, Gamma Sigma Delta, Phi Kappa Phi, Sigma Xi, Phi Zeta
Texas Veterinary Medical Association Faculty Achievement Award (1969), Research Award (1988)
Texas A&M University Veterinary Students “Good Stick Award” (1974)
Norden Distinguished Teaching Award (1977)
Former Students Association Faculty Distinguished Achievement Award (1979)
Former Students Association, College of Veterinary Medicine Teaching Excellence Award (1982)
Association of Teachers of Veterinary Public Health & Preventive Medicine of the U.S. & Canada, Award of Recognition (1984)
Texas Veterinarian Medical Association, President (1984-1985)
Alumnus of the Year, University of Missouri, College of Veterinary Medicine, Alumni Association (1985)
American College of Veterinary Preventive Medicine-Appreciation Award (1985), Distinguished Diplomate (1989)
Council for Agriculture and Science, Board of Directors (1987-91)
TAMU Deputy Chancellor’s Award for Excellence in Graduate Teaching (1990)
American College of Veterinary Preventive Medicine Certificate of Appreciation (1990)
American Veterinary Epidemiology Society, Honorary Diploma (1990)
Louisiana Veterinary Medical Association, Resolution of Recognition (1991)
Commonwealth of Kentucky, Gov. B.C. Jones, Commissioned as Kentucky Colonel (1992)
El Paso, Texas, Mayor Larry Francis, Key to the City of El Paso (1994
American Veterinary Medical Association, President (1993-1994)
Association of Military Surgeons of the U.S., James A. McCallam Award (1994)
Texas Department of Health’s Committee on “Veterinary Response to Chemical in Biological Terrorism in Texas” (1998)
International HACCP Alliance, Board of Directors (1996-2009)
Helwig-Jennings Award, American College of Veterinary Preventive Medicine (1998)
B.G. Russell McNellig Memorial Lecturer, 49th International Military Veterinary Med. Symposium, Chiemsee, Germany (1998)
Distinguished Membership, Texas Veterinary Medical Association (1998)
XIth International Veterinary Congress Prize (2000)
World Veterinary Association Vice-President (2002-2005); World Veterinary Association President (2005-2008)
Southwest Veterinary Symposium Award for World Leadership in Veterinary Medicine (2005)
AVMA President’s Award (2006)
The “J.V. Iron’s Speaker” at the 53rd James Steele 53rd Diseases in nature transmissible to Man Conference, April 22, 2008, Galveston, Texas.
University of Missouri bestowed an honorary Doctor of Science Degree, May 15, 2010, Columbia, Missouri.
American Veterinary Medical Association’s “AVMA Award”, July 31, 2010, Atlanta, Georgia.

TEACHING EXPERIENCE:
VIBS 404, Food Toxicology and Safety, 2010
SAYES, CHRISTIE M  
Veterinary Physiology & Pharmacology and Biomedical Engineering

EDUCATION:
- Louisiana State University  B.S.  1997-2001  Chemistry
- Rice University  Ph.D.  2001-2005  Chemistry
- DuPont Haskell Global Centers  Post-doc  2005-2007  Toxicology

POSITIONS AND EMPLOYMENT:
- Dec 2000-May 2001  Technical Support Scientist, Louisiana State University
- May 2001- Dec 2003  Teaching Assistant, Rice University
- Dec 2005-Dec 2007  Post-doctoral Fellow, Visiting Scientist, the DuPont Company
- Jan 2008-present  Assistant Professor of Vet. Phys. & Pharm., TAMU
- Jan 2008-present  Member of Intercollegiate Faculty of Toxicology (IFT), TAMU
- Jan 2008-present  Member of the Faculty of Material Sciences & Engineering, TAMU
- Feb 2009-present  Executive Committee Member of IFT, TAMU
- Apr 2009-present  Adjunct Appointment in Biomedical Engineering, TAMU
- Apr 2009-present  Adjunct Appointment in the Institute of Biosciences, TAMHSC
- May 2009-present  Secretary of the Gulf Coast Chapter of the Society of Toxicology
- May 2009-present  Counselor to the Nanotoxicology Specialty Section of the Society of Toxicology
- May 2009-present  Member of Graduate Faculty of the Biotechnology Program, TAMU
- Oct 2009-present  Member of US EPA FIFRA Scientific Advisory Panel
- April 2010-present  Executive Committee Member of the Biotechnology Program, TAMU

HONORS:
- 2001  Welch Fellowship Supplemental Award
- 2004  Harry B. Weiser Graduate Student Award for Research
- 2004  Houston Livestock and Rodeo Endowed Scholarship
- 2005  1st International Toxicology of Nanomaterials: Young Investigator Award
- 2006  Society of Toxicology, Inhalation Specialty Section, Postdoctoral Award
- 2007  Society of Toxicology, Best Post-doctoral Publication Award
- 2008  EMPA Nano-Eco Young Investigator Award
- 2009  Searle Scholars Program, Texas A&M University Representative
- 2009  BWF Investigators in Pathogenesis of Infectious Disease, Texas A&M University Nominee
- 2010  DuPont Young Professor Award
SELECTED PEER-REVIEWED PUBLICATIONS:
(Publications selected from over 40 peer-reviewed publications)


RESEARCH SUPPORT:
Product Quality Research Institute, PQRI 10/01/10-09/30/11
Role: PI

The Texas Higher Education Coordinating Board, NHARP 08/01/10-07/31/12
Developing predictive toxicity models using nanomaterial structure-activity relationships
Role: PI

The DuPont Young Professor Award and Grant 08/01/10-07/31/13
Role: PI

NSF 08/01/09-07/31/11
Planning Visit: Multidisciplinary International Collaboration between Texas A&M University and Swansea University
Role: co-PI

Texas AgriLife Research Vector-Borne Disease Program 12/01/09-11/30/11
Vector Eradication: Delivery of Novel Pesticide Encapsulated Nanoparticles
Role: co-PI

Texas Pathways to Doctorate Assistantship Grant 08/01/10-07/31/12
Through the eye of the cell: Investigating differential cellular uptake mechanisms of metal oxide nanoparticles in the pulmonary epithelium
Role: PI

NSF 05/01/09-08/31/10
BBSI: Vascular Bioengineering Summer Institute) investigator
Role: co-investigator

Texas A&M University Systems, Faculty Resources Grant 01/01/08-12/31/10
Predicting toxicity of metal oxide nanoparticles: Developing quantitative structure-activity relationships and their generalizations for nanotoxicology research
Role: PI
CURRICULUM VITAE
Charles Mack Scanlan, DVM, PhD

EDUCATION:

| Degree/Training | Conferring Institution                                | Field                                             | Year |
|-----------------|------------------------------------------------------|                                                  |      |
| BS              | University of Missouri                               |                                                   | 1966 |
| DVM             | University of Missouri                               |                                                   | 1968 |
| PhD             | University of Missouri-Columbia                       |                                                   | 1979 |

PROFESSIONAL EXPERIENCE AND ACADEMIC APPOINTMENTS:

1996-present  Professor, Veterinary Pathobiology
1985-1995    Associate Professor, Veterinary Microbiology/Veterinary Pathobiology
1976-1979    Research Associate, College of Veterinary Medicine, University of Missouri-Columbia, Columbia, Missouri
1979-1981    Assistant Professor, College of Veterinary Medicine, Mississippi State University, Starkville, Mississippi
1981-1985    Associate Professor, College of Veterinary Medicine, Auburn University, Auburn, Alabama

TEACHING EXPERIENCE:
VTPB 405, Biomedical Microbiology (5 Credits: 3 Lecture/2 Laboratory): Fall Semesters, Spring Semesters and 10 Week Summers Sessions: 1996-2009
VTPB 485, Undergraduate Teaching Assistants for VTPB 405 (1 or 2 Credit Hours/Student): Fall Semesters, Spring Semesters and 10-Week Summer Sessions (Average of 15 Students/Year): 1997-2009
VTPB 421, Bacterial Diseases of Humans and Domestic Animals (3 Credits/3 Lecture): Fall Semesters, 1996-2009
VTMI 485, Problems Course: Fall Semesters, Spring Semesters, Summer Sessions. Average of 10 Students/Year and Credit Hours Range from 1 to 3 Hours/Student.1996-2009

REFEREED PAPERS:

BOOK CHAPTERS:

CURRENT EXTERNAL SUPPORT:
National Institutes of Health
Johnson L, Scanlan C, et al: Science Promotion in Rural Middle Schools: Phase I + II. NIH Continuation Grant 0801278. 2007-2012, $1,413,000. Scanlan: Continuing Education Director. FTE allocation, 2.4 months (20% FTE) with 16.8% salary savings ($10,664) including $2,133 allocated for departmental overhead. Note: Salary savings vary from year to year
National Pork Board
Harvey R, Hume M, Scott H, McReynolds J, Scanlan C: Phenotypic and genotypic comparison of toxigenic Clostridium difficile from a semi-closed population of swine to humans in a vertically integrated swine operation. 2008-2010, $49,500
EDUCATION:

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<tr>
<td>BS</td>
<td>University of Arkansas</td>
<td>Animal Science</td>
<td>1996</td>
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<td>DVM</td>
<td>Oklahoma State University</td>
<td>Veterinary Medicine</td>
<td>2000</td>
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<td>PhD</td>
<td>Texas A&amp;M University</td>
<td>Toxicology</td>
<td>2005</td>
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PROFESSIONAL EXPERIENCE AND ACADEMIC APPOINTMENTS:

2005-Present  Clinical Assistant Professor, Department of Veterinary Physiology and Pharmacology, Texas A&M University – College of Veterinary Medicine, College Station, Texas

2000-2005  Veterinary Clinical Associate, Department of Veterinary Physiology and Pharmacology, Texas A&M University – College of Veterinary Medicine, College Station, Texas

1999  Veterinary Intern, Pharmacia and Upjohn, Kalamazoo, Michigan

AWARDS AND HONORS:

Clinical Assistant Professor
- Bayer Animal Health Communication Project Faculty Program 2008
- Richard Davis Teaching Award 2006

Graduate School
- United States Pharmacopeia Fellowship 2003-2004
- Outstanding Ph.D. Graduate Student 2002
- Regents Fellowship 2000-2001

Veterinary School
- Merck Award For Academic Excellence 2000
- Hill’s Pet Nutrition Multicultural Scholarship 2000
- John Montgomery Scholarship 1996-2000
- Salsbury Scholarship 1999
- President’s Honor Roll 1996-1999
- Dean’s Honor Roll 1997-2000
- Vice President, American Association of Feline Practitioners 1998-1999
- Vice President, Veterinary Multicultural Club 1996-1997
- Secretary, Veterinary Multicultural Club 1996-1997

Undergraduate
- Carl B. and Florence E. King Foundation Pre-vet Scholarship 1994-1996
- University of Arkansas, Bumpers College Ambassador 1995-1996
- Outstanding Animal Science Senior 1995-1996
- Gamma Sigma Delta Sophomore Scholar 1994-1995
- President, Alpha Zeta 1994-1995
- Phi Kappa Phi 1994-1996
- Gamma Beta Phi 1994-1996
- Gamma Sigma Delta 1995-1996
- Second place, Jessie O’Kelly Freshman Essay Contest 1992
TEACHING EXPERIENCE:
Pharmacology (VTPP 425)—Course Coordinator TAMU 3 2006-

Book Chapters:

CURRENT EXTERNAL SUPPORT:
Title: Biologists and Engineers Advancing Diversity in Research
Agency: National Institutes of Health, NHLBI
Total Award Amt: $440,361
Award Period: April 7, 2006-March 31, 2011
Role: Co-Principal Investigator
CURRICULUM VITAE
Christopher M. Seabury, PhD

EDUCATION:

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<td>BS</td>
<td>Sul Ross State University</td>
<td>Zoology</td>
<td>1997</td>
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<td>MS</td>
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<td>Biology</td>
<td>2000</td>
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<td>PhD</td>
<td>Texas A&amp;M University</td>
<td>Genetics</td>
<td>2004</td>
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<td>College Station, Texas</td>
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PROFESSIONAL EXPERIENCE AND ACADEMIC APPOINTMENTS:

2009-Present  Assistant Professor, Genomics, Department of Veterinary Pathobiology, Texas A&M University, College Station, Texas
2007-2008    Assistant Research Scientist, Bovine and Cervid Genetics, Department of Veterinary Pathobiology, Texas A&M University, College Station, Texas
2006-2007    Postdoctoral Research Associate, Bovine Genomics, Department of Veterinary Pathobiology, Texas A&M University, College Station, Texas
2006-2007    Guest Lecturer, Prion diseases in cervids (CWD), VTPB 301 Wildlife Diseases
2006-2006    Guest Lecturer, Quantitative & Population Genetics, Biomedical Genetics 320
2004-2006    Postdoctoral Research Associate; Equine Genomics, Veterinary Integrative Biosciences, Texas A&M University, College Station, Texas
2004-2004    Teaching Assistant, Biomedical Genetics 320, VTPB/GENE; TAMU
2001-2004    Research Assistant; Derr Research Laboratory; Population Genetics; VTPB-TAMU
2000-2001    Interim Coordinator: DNA Core Facility; Veterinary Pathobiology (VTPB), TAMU
1999-2000    Visiting Scientist: TAMU, Veterinary Pathobiology, DNA Core Facility
1999-1999    Interim Curator: SRSU Vertebrate Collection; (Supervisor: A. Michael Powell PhD)
1999-1999    Interim Manager: SRSU Molecular Laboratory (Supervisor: A. Michael Powell PhD)
1999-2001    Research Assistant; Department of Biology SRSU Mammal and Molecular Laboratory
1998-2000    Laboratory Assistant; Mammalogy, Ornithology, Ichthyology, Herpetology
1998-1999    Laboratory Assistant; Molecular Techniques (5302) Graduate level; SRSU
1997-1997    Ichthyology and water Chemistry field training; Clark Hubbs PhD; Prof Emeritus UT
1996-1997    Undergraduate population genetics research; SRSU Molecular Lab

AWARDS AND HONORS:
SRSU Biology Department Graduate Scholarship (A. Michael Powell PhD), 1999-1999
Outstanding Biology Graduate Student, Biology Graduate Student of the year, 1999-2000
Texas A&M College of Veterinary Medicine Graduate Student Association; Elected, 2003-2004
Texas A&M College of Veterinary Medicine Junior Faculty Mentor to The CVM Postdoctoral Assoc., Elected, 2009-2010

TEACHING EXPERIENCE:
Veterinary Pathobiology 485: Research projects
Biomedical Sciences 320: Biomedical Genetics (3 credits; 45 contact hours)
REFERREED PAPERS 2005-2010:


Gillenwaters EN, **Seabury CM**, Elliott JS, Womcak JE (2009) Sequence analysis and Polymorphism discovery in 4 members of the bovine Cathelicidin gene family. *J Hered* 100(2) 241-250. PMID: 19136450


# CURRICULUM VITAE

Loren Skow, PhD

## EDUCATION:

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<tr>
<td>MS</td>
<td>Abilene Christian University</td>
<td>Biology</td>
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<td>PhD</td>
<td>Texas A&amp;M University</td>
<td>Fisheries Sciences</td>
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## PROFESSIONAL EXPERIENCE AND ACADEMIC APPOINTMENTS:

- **1970**: Graduate Instructor in Biology, Abilene Christian University, Abilene, Tx.
- **1971**: Research Assistant in Fisheries Science, Texas A&M University, College Station, Tx.
- **1972**: Rotary International Graduate Fellow in Biology, University of Queensland, Australia.
- **1973-1976**: Research Assistant in Fisheries Science, Texas A&M University, College Station, Tx.
- **1976-1978**: NIH Postdoctoral Trainee Biomedical Genetics, The Jackson Laboratory, Bar Harbor, Me.
- **1978-1979**: Research Associate, Univ. of Tennessee Graduate School of Biomedical Science, Oak Ridge, Tn.
- **1979-1981**: Research Scientist, Biology Division, Oak Ridge National Laboratory, Oak Ridge, Tn.
- **1981-1985**: Senior Staff Fellow, Eukaryotic Gene Structure Section, Laboratory of Genetics, National Institute of Environmental Health Sciences, Research Triangle Park, NC.
- **1985-1993**: Associate Professor, Department of Veterinary Anatomy, College of Veterinary Medicine, Texas A&M University, College Station, Tx.
- **1993-current**: Professor, Department of Veterinary Integrative Biosciences, College of Veterinary Medicine and Biomedical Sciences, Texas A&M University, College Station, Tx.

## TEACHING EXPERIENCE:

BIMS 320/GENE320, Biomedical Genetics

## REFERREED PAPERS 2005-2010: (LAST 5 YEARS)


CURRENT EXTERNAL SUPPORT:
1. Haplotypes of the bovine MHC
   L.C. Skow, H.M. Scott and C.R. Huber
   USDA NRI Animal Genomes
   $439,000
   2006-2010

2. Equine Medical Genetics Consortium
   J. Mickelson (PI) and L.C. Skow, et al.
   Morris Animal Foundation
   $225,000 (Skow-$25,000)
   2010
CURRICULUM VITAE
James R. Snell, DVM

EDUCATION:

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<tr>
<td>BS</td>
<td>Texas A&amp;M University</td>
<td>Biomedical Sciences</td>
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PROFESSIONAL EXPERIENCE AND ACADEMIC APPOINTMENTS:

2002-present  Director - Instructional Technology Services, Texas A&M University
1995-2002    Coordinator: Information System, College of Veterinary Medicine, Texas A&M University
1994-present Senior Lecturer, Department of Veterinary Integrated Biosciences, College of Veterinary Medicine, Texas A&M University
1990-1994    Lecturer, Department of Veterinary Anatomy and Public Health, College of Veterinary Medicine, Texas A&M University
1987-2002    Lab Director, Veterinary Knowledge Engineering Laboratory, College of Veterinary Medicine, Texas A&M University
1987-1990    Lecturer, Department of Veterinary Public Health, College of Veterinary Medicine, Texas A&M University
1985-1987    Computer Systems Manager, Department of Mechanical Engineering, College of Engineering, Texas A&M University
1982-1985    Participated in the operations of a family owned farming and ranching business, Brenham Texas
1980-1982    Practice of small animal medicine, founded the Alief-Bellaire Animal Clinic, Houston Texas
1978-1980    Practice of small animal medicine, partnership in the Interstate 30 Animal Hospital, Garland and the Eastfield Animal Hospital, Mesquite
1977-1978    Associate Veterinarian, Beechnut Animal Clinic, Houston Texas

AWARDS AND HONORS:

1977- present, State of Texas license to practice veterinary medicine - inactive status
Received 25 year TAMU service pin at Academic Affairs Awards Ceremony. 2010
Nominated by ITS staff for “Boss of the Year” and attended Boss’s Day breakfast sponsored by the TAMU Association of Professional Support Staff. 2007.

TEACHING EXPERIENCE:

VIBS 420 - Computer Applications in Public Health Research. (2-3). Credit 3
Principles and concepts related to the use of computers in biomedical sciences, including word processing, spreadsheets, database management, remote database searching and telecommunications. Prerequisite: Senior classification. (1987-present)
CURRICULUM VITAE
Karen F. Snowden, DVM, PhD

EDUCATION:

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<tr>
<td>BS</td>
<td>University of Montevallo</td>
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<td>Auburn University</td>
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<td>PhD</td>
<td>North Carolina State University</td>
<td>Veterinary Medicine</td>
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PROFESSIONAL EXPERIENCE AND ACADEMIC APPOINTMENTS:

2000-Present  Associate Professor, Veterinary Pathobiology, Texas A&M University, College Station, Texas
2001-2007    Adjunct Associate Professor, UT Health Science Center, Houston, Texas
1993-1999    Assistant Professor, Veterinary Pathobiology, Texas A&M University, College Station, Texas
1992-1993    Lecturer, Veterinary Parasitology, Liverpool School of Tropical Medicine, Liverpool, England
1989--1993   Post Doctoral Senior Research Associate, Tropical Medicine, Liverpool School of Tropical Medicine, Liverpool, England
1983-1988    Research Graduate Assistant, North Carolina State University, Raleigh, North Carolina
1979-1983    Veterinary Practitioner, Lincolnton Animal Hospital, Lincolnton, North Carolina
1974-1979    Research Assistant, Department of Fisheries, Auburn University, Auburn, Alabama
1970-1973    Teaching Assistant, University of Montevallo, Montevallo, Alabama

AWARDS AND HONORS:

Phi Zeta Veterinary Honor Society (North Carolina State University), (1997-98 TAMU Eta Chapter President, 1988
TAMU Faculty Award for International Excellence, 1995
Phi Beta Delta Honor Society for International Scholars(TAMU Alpha Eta Chapter Secretary 1998-00), 1995
Texas Veterinary Medical Association Faculty Achievement Award, Teaching, 1998
TAMU Montague Scholar Award, Center for Teaching Excellence, 1998
Texas Veterinary Medical Association Faculty Achievement Award, Research, 2001

TEACHING EXPERIENCE:

Veterinary Pathobiology 487: Biomedical Parasitology (3 credits; 45 contact hours) course coordinator on rotating basis (spring semesters)

Veterinary Pathobiology 405: Biomedical Microbiology (5 credits; 75 hours) regular guest lecturer (summer semesters)

Veterinary Pathobiology 285/485: Research projects/directed studies
REFERRED PAPERS 2005-2010:


Book Chapters:


## EDUCATION:

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<td>BS</td>
<td>The University of Texas</td>
<td>Biology (Highest Honors)</td>
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<td>The University of Texas</td>
<td>Genetics</td>
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<td>PhD</td>
<td>The University of Texas Medical Branch</td>
<td>Human Genetics and Cell</td>
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<td>Galveston, Texas</td>
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## PROFESSIONAL EXPERIENCE AND ACADEMIC APPOINTMENTS:

1976-1977 Predoctoral Trainee, Teaching Assistant, University of Texas at Austin
1977-1979 Predoctoral Trainee, Teaching & Research Assistantship, The University of Texas Medical Branch, Galveston
1980-1982 Postdoctoral Fellow, University of California at Los Angeles
1982 Assistant Professor, Veterinary Anatomy, Texas A&M University
1987-1994 Associate Professor (tenured), Veterinary Anatomy, Texas A&M University
1989-1990 Visiting Associate Professor, University of Texas Health Science Center at San Antonio
1990-Present Faculty of Toxicology (Executive Council), Texas A&M University
1991-Present Faculty of Neurosciences, Texas A&M University
1994-Present Professor, Veterinary Anatomy and Public Health, Texas A&M University
1996-1998 Assistant Dean for Undergraduate Education, College of Veterinary Medicine, Texas A&M University
1998-Present Associate Dean for Undergraduate Education, College of Veterinary Medicine, Texas A&M University
1998-1999 Interim Department Head, Veterinary Anatomy and Public Health, Texas A&M University
1999-Present Department Head, Veterinary Integrative Biosciences (renamed from Veterinary Anatomy and Public Health), Texas A&M University

## AWARDS AND HONORS:

- National Merit $1000 Scholarship, 1972
- Texas Valedictorian Scholarship, 1972
- General Property Scholarship, The University of Texas at El Paso, 1972-1975
- Graduation with Highest Honors, The University of Texas at El Paso, 1975
- Women’s Auxiliary Scholarship, The University of Texas at El Paso, 1975
- Welsh Fellowship, The University of Texas, Austin, Texas, Summer 1976
- NIH National Research Service Award Predoctoral Traineeship, 1978-1979
- Bank of America - Giannini Foundation Medical Research Fellowship, 1980-1982
- Outstanding Young Women of America, 1985
- Gamma Sigma Delta, 1986
- Sigma Xi, 1990
- Carrington Award for Research, College of Veterinary Medicine, 1993
- TAMU Former Students Association Distinguished Faculty Award for Research, 1998
- Phi Kappa Phi, Faculty Member, 1999-present
Research Experience:
Veterinary Integrative Biosciences 285: Directed Studies, 4 Credit Hours, 100% of Course, 1-3 Students/semester, Ongoing
Veterinary Integrative Biosciences 485: Directed Studies, 4 Credit Hours, 100% of Course, 1-3 Students/semester, Ongoing

REFERREED PAPERS 2005-2010:


Books:
# CURRICULUM VITAE

Ian Tizard, BVMS, PhD, ACVM

## EDUCATION:

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<td>BVM &amp; S</td>
<td>University of Edinburgh</td>
<td>Veterinary Medicine</td>
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<td>B.Sc. (Honours)</td>
<td>University of Edinburgh</td>
<td>Pathology</td>
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<td>PhD</td>
<td>University of Cambridge</td>
<td>Immunology</td>
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## PROFESSIONAL EXPERIENCE AND ACADEMIC APPOINTMENTS:

- **1999-Present** Richard M. Schubot Professor of Exotic Bird Health, Veterinary Pathobiology, Texas A&M University, College Station, Texas
- **1990-1999** Professor of Immunology, Veterinary Pathobiology, Texas A&M University, College Station, Texas
- **1982-1990** Professor and Head, Veterinary Pathobiology, Texas A&M University, College Station, Texas
- **1979-1982** Professor, University of Guelph
- **1974-1979** Associate Professor, University of Guelph
- **1972-1974** Assistant Professor, University of Guelph
- **1969-1971** MRC Post-Doctoral Fellow, University of Guelph

## AWARDS AND HONORS:

- **1964** Commonwealth Bureau of Animal Health Prize
- **1964** Animal Health Trust Prize
- **1965** William Dick Gold Medal - Univ. of Edinburgh
- **1982** Norden Distinguished Teacher Award - Univ. of Guelph
- **1986** Phi Zeta
- **2000** Biomedical Science Teaching Award
- **2002** Texas A&M Corps of Cadets Appreciation award
- **2003** Veterinary Honor Roll, Morris Animal Foundation
- **2004** Phi Beta Delta
- 2005 Special Award for “Distinguished Contributions to Veterinary Immunology”, American Association of Veterinary Immunologists.
- **2006** First Recipient, “Outstanding Veterinary Microbiologist Award”, American College of Veterinary Microbiologists
- **2006** Texas A&M University, Distinguished Lecturer
- **2007** Honorary Professor, National University of Argentina at La Plata

## TEACHING EXPERIENCE:

Veterinary Pathobiology 221: Great Diseases of the World (3 credits; 45 contact hours), Professor

Veterinary Pathobiology 221: Honors Great Diseases of the World (3 credits; 45 contact hours), Professor
ReferreeD Papers 2005-2010:
Yawei Ni, Liying Tian, Babu Medi, Jianhua Guo, Paul Stroud, Debra Turner, Itamar Villanueva, Nancy Arden, John Quarles, and IAN TIZARD. A Novel Dry Powder Vaccine Formulation (GelVac™) for Influenza Vaccines. Options for influenza control. In Press

Book Chapters:
Yawei Ni, Liying Tian, Babu Medi, Jianhua Guo, Paul Stroud, Debra Turner, Itamar Villanueva, Nancy Arden, John Quarles, and IAN TIZARD. A Novel Dry Powder Vaccine Formulation (GelVac™) for Influenza Vaccines. Options for influenza control. In Press


CURRICULUM VITAE
Vijay S. Venkatraj, PhD

EDUCATION:

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<td>BVSc</td>
<td>Madras Veterinary College</td>
<td>Veterinary Science</td>
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<td>MS</td>
<td>New York University, New York, USA</td>
<td>Biology</td>
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<td>PhD</td>
<td>Columbia University, New York, USA</td>
<td>Biology (Human Genetics)</td>
<td>1992</td>
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PROFESSIONAL EXPERIENCE AND ACADEMIC APPOINTMENTS:

2005-Present  Present Clinical Assistant Professor, Dept. of Veterinary Anatomy & Public Health, College of Veterinary Medicine, Texas A&M University
1999-2004  Research Assistant Professor, Dept. of Veterinary Anatomy & Public Health, College of Veterinary Medicine, Texas A&M University
1997-1998  Instructor in Pathology, Molecular Genetics/Molecular Cytogenetics, Dept. of Pathology, College of Physicians and Surgeons, Columbia University
1996-1997  Associate Research Scientist, Molecular Genetics/Molecular Cytogenetics Clinical Fellow: Human Molecular Genetics, Dept. of Pathology, College of Physicians and Surgeons, Columbia University
1986-1992  Visiting Scientist, Laboratory for Investigative Dermatology/ The Rockefeller University
1983-1985  Research Assistant, Investigative Dermatology, Rockefeller University, N.Y.
1980-1982  Senior Research Fellow, Indian Council of Agricultural Research, India

TEACHING EXPERIENCE:
GENE 320/BIMS320, Biomedical Genetics
GENE 421, Advanced Human Genetics
VIBS 485, Directed Studies

REFERREED PAPERS 2005-2010: (LAST 5 YEARS)


CURRENT EXTERNAL SUPPORT:

2007-2008: Association studies between PON1 polymorphism and Neuroblastoma in children from Rural Texas (Texas Department of State Health Services)

2007-2008: Association studies between SNP’s in DNA repair and organophosphate pesticide (OP) metabolizing enzymes to NIEHS panel of cell lines. (A seed grant from a NIH RO1 grant to Dr J Wild, Professor of Biochemistry, Texas A & M University)

This is a study with seed money from Texas Department of State Health services. This study evaluates known PON1 enzyme polymorphism, pesticide exposure (using GIS) based on wind drift and development of neuroblastoma in young children in Texas. The DNA is extracted from Gutrie’s card. We have access to more than 2 million Gutrie’s card samples from children born in Texas between 2000 and 2006.


This study evaluated the correlation between PON1 SNP status in children between 2-9 years of age living in close proximity to farmland along the Texas-Mexico border and levels of organophosphate pesticide (OP) metabolites in urine samples. Hand washes were used to determine OP ingestion.

2002-2004 Molecular Fingerprinting of Vaccine Associated Feline Sarcoma Evolution –American Veterinary Medical Association- Feline Sarcoma Task Force. PI

This study evaluated twelve vaccine associated sarcomas in felines using targeted expression arrays from genes involved in oncogenesis. Additional work was done using RNAi targeting disregulated genes.


This study tested the feasibility of using sterile bandages with covalently attached organophosphate (OP) hydrolase as a potential method for protecting humans from OP exposure. Treated bandages were placed on rabbits that were then exposed to OPs to track mechanisms of dermal exposure and evaluate decontamination potential.
# CURRICULUM VITAE

**Gerald Gale Wagner, PhD**

## EDUCATION:

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<tr>
<td>BS</td>
<td>Texas Tech University</td>
<td>Bacteriology</td>
<td>1963</td>
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<td>MA</td>
<td>University of Kansas</td>
<td>Microbiology</td>
<td>1966</td>
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<td>PhD</td>
<td>University of Kansas</td>
<td>Immunochemistry</td>
<td>1968</td>
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## PROFESSIONAL EXPERIENCE AND ACADEMIC APPOINTMENTS:

- **1968-70** Postdoctoral Research Associate National Science Foundation, Plum Island Animal Disease Center, Greenport, New York
- **1970-71** Microbiologist Immunological Investigations Plum Island Animal Disease Center, Greenport, New York
- **1971-77** Microbiologist and USDA Cooperative Research Division, Official-in-Charge East African Veterinary Research Organization, Muguga, Kenya
- **1977-86** Associate Professor, Department of Veterinary Microbiology and Parasitology, Texas A&M University, College Station, Texas
- **1986-present** Professor, Department of Veterinary Microbiology and Parasitology, Texas A&M University, College Station, Texas
- **1990-91** Interim Assistant Department Head, Department of Veterinary Microbiology and Parasitology, Texas A&M University, College Station, Texas
- **1991-present** College Coordinator of International Programs, Texas A&M University, College Station, Texas

## AWARDS AND HONORS:

- Elected to the Society of Sigma Xi, 1971
- Elected to the American Association of Immunologists, 1973
- Selected for inclusion in American Men and Women of Science, 1977
- Selected for inclusion in *Who's Who in Frontier Science and Technology*, 1979
- Texas Agricultural Experiment Station Team Research Award, 1984
- Selected for inclusion in *Who's Who in the South and Southwest*, 1985
- Elected to Phi Beta Delta International Society, 1990
- Outstanding Faculty Award, TAMU Graduate Student Council, 1997
- Vice Chancellor's Award in Excellence for International Involvement, 1998
- Nominated for the Bridges Chair in Veterinary Medical Education (declined), 2001
- Named a USDA-APHIS Foreign Animal and Poultry Disease Expert, 2001
- Invited by the WHO to participate in the Malaria Genome Sequencing Consortium (declined), 2001
- Invited to address an international symposium on tick-borne diseases in Obihiro, Japan, 2002
- Invited to address an international symposium on tick-borne diseases in Chonju, Korea (declined), 2002
- Inducted into the Mexican Veterinary Academy, 2002
Texas A&M University, Bush Excellence Award for Faculty in International Teaching, 2008

TEACHING EXPERIENCE:
Veterinary Pathobiology 409: Introduction to Immunology (3 credits; 45 contact hours), Professor, (fall and spring semesters)

REFEREED PAPERS 2005-2010:
Critical Parameters for modeling the spread of FMD in white-tailed deer populations. Highfield, L., Norby, B., Wagner, G., and Ward, M. Preventive Veterinary Medicine. Accepted for publication with revision.
The impact of seasonal variability in wildlife populations on the predicted spread of foot and mouth disease. L.D. Highfield, M.P. Ward, S.W. Laffin, B. Norby, and G.G. Wagner. Veterinary Research. Accepted for publication.

Book Chapters:

CURRENT EXTERNAL SUPPORT:
Title: Preventing colibacillosis diarrhea in calves with anti-F5 recombinant antibodies produced in rice plants.
Agency: CONACyT
Total Award Amt: $24,000
Award Period: 2006-2007
Person-months Committed per Year:
Role:

**Title:** Development of an improved DNA vaccine for bovine viral diarrhea in calves.
Agency: CONACyT
Total Award Amt: $15,780
Award Period: 2008-2009
Person-months Committed per Year:
Role:
CURRICULUM VITAE
Jeremy Seth Wasser, PhD

EDUCATION:

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<td>BA</td>
<td>Oberlin College</td>
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PROFESSIONAL EXPERIENCE AND ACADEMIC APPOINTMENTS:

2009-2010 Visiting Professor (Gastdozent), Tierärztliche Hochschule Hannover (College of Veterinary Medicine, Hannover, Germany,)

1997-Present Adjunct Associate Professor, Department of Systems Biology and Translational Medicine, Texas A&M University Health Science Center

1997-Present Associate Professor, Department of Veterinary Physiology and Pharmacology, College of Veterinary Medicine, Texas A&M University

1994-Present Assistant Professor, Department of Medical Physiology, College of Medicine, Texas A&M University

1993-1997 Assistant Professor, Department of Veterinary Physiology and Pharmacology, College of Veterinary Medicine, Texas A&M University

1991-1992 Visiting Scientist, Abteilung Physiologie, Mac-Planck Institut für Experimentelle Medizin, Göttingen, Germany

1991-1993 Assistant Professor (Research) of Physiology and Biophysics, Division of Biology and Medicine, Brown University

1988-1991 Postdoctoral Research Fellow in Medical Science, Division of Biology and Medicine, Brown University

1985-1988 Postdoctoral Research Associate, Division of Biology and Medicine, Brown University

1980-1984 Associate Instructor, Physiology Section, Medical Sciences Program, Indiana University

1981 Instructor, School of Continuing Studies, Indiana University

1977-1979 Teaching Assistant, Department of Anatomy, University of Florida College of Veterinary Medicine

1976-1977 Teaching Assistant, Department of Zoology, University of Florida

AWARDS AND HONORS:
Scholander Award, Comparative Physiology Section, American Physiological Society, 1989
Richard H. Davis Teaching Award, Texas A&M University, College of Veterinary Medicine, 2003
International Excellence Award faculty recipient, Texas A&M University, Office of the Associate Vice President for International Programs, 2006

TEACHING EXPERIENCE:
Veterinary Physiology and Pharmacology 434/435: Physiology for Bioengineers I and II (4 credits: 75 contact hours) course lectures
Veterinary Physiology and Pharmacology 401/BIMS 489: History of Human and Veterinary Medicine in Europe (4 credits: 75 contact hours) Study Abroad Program

REFERREED PAPERS 2005-2010:
EDUCATION:

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PROFESSIONAL EXPERIENCE AND ACADEMIC APPOINTMENTS:

1995-Present  Associate Professor, Veterinary Pathobiology, Texas A&M University, College Station, Texas
1988-1995    Assistant Professor, Veterinary Pathobiology, Texas A&M University, College Station, Texas
1986-1988    Research Fellow, Veterinary Pathology, Kansas State University, Manhattan, Kansas
1985-1988    Residency in Anatomic Pathology, Kansas State University, Manhattan, Kansas
1985-1986    Instructor, Veterinary Pathology, Kansas State University, Manhattan, Kansas
1983-1985    Private Veterinary Medical practice, Oklahoma City, Oklahoma

AWARDS AND HONORS:

AVMA Foundation - ALPO Research Fellowship, 1985 - 1988
TAMU Montague Center for Teaching Excellence (CTE) Scholar, 1992
TAMU Association of Former Students Distinguished Teaching Award (Univ.), 2000
TVMA Faculty Achievement Award in Teaching, 1995
Carl J. Norden Distinguished Teacher Award, TAMU, 2000 and 2005
John H. Milliff Veterinary Faculty Award, TAMU 2003 and 2009

TEACHING EXPERIENCE:

Veterinary Pathobiology 410: Cell Mechanisms of Disease (3 credits; 45 contact hours) Associate Professor
Veterinary Pathobiology 485: Research projects/Directed Studies

REFERREED PAPERS 2005-2010:

David W.L. Ma, Richard H. Fin nell, Laurie A. Davidson, Evelyn S. Callaway, Ofer Spiegelstein, Jorge A.
Masako Andoh, Guoquan Zhang, Kasi E. Russell-Lodrigue, Heather R. Shive, Brad R. Weeks, and James E. Samuel. T Cells Are Essential for Bacterial Clearance, and Gamma Interferon, Tumor Necrosis Factor Alpha,
CURRICULUM VITAE
Shannon Wilson, DVM, PhD

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PROFESSIONAL EXPERIENCE AND ACADEMIC APPOINTMENTS:

2010-Present  Clinical Assistant Professor, Department of Veterinary Physiology & Pharmacology, Texas A&M University, College Station, Texas

2007-2010  Graduate Research Assistant and Lecturer, Department of Veterinary Physiology & Pharmacology, Texas A&M University, College Station, Texas

1994-2006  Owner of Clinic 1996-2006, Austin Avenue Pet Clinic, Brownwood, Texas

1994-1995  Associate veterinarian (mixed practice), Brady Veterinary Hospital, Brady, Texas

1994  Internship, Pharmacology research, Texas A&M University, College Station, Texas

AWARDS AND HONORS:

Phi Zeta (Veterinary Honor Society), 1993-1994
Morris Animal Foundation Scholarship and Student Representative, 1991-1993
Regents Fellowship, College of Veterinary Medicine, 2007-2008
Interdisciplinary Faculty of Reproductive Biology Travel Scholarships, 2008-2009
Phil Gramm Doctoral Fellowship for Excellence in Scholarly Research and Teaching, 2010

TEACHING EXPERIENCE:

Veterinary Physiology & Pharmacology 423: Biomedical Physiology (4 credits, 60 hours)

REFERREED PAPERS 2005-2010:


**CURRENT EXTERNAL SUPPORT:**

**Title:** Mechanisms and Nutritional Intervention for Fetal Alcohol Spectrum Disorders

**Agency:** NIH (NIAAA) K-08 Award

**Total Award Amt:**

**Award Period:**

**Person-months Committed per Year:**

**Role:**
CURRICULUM VITAE
James E. Womack, PhD

EDUCATION:

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<td>Abilene Christian College</td>
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<td>PhD</td>
<td>Oregon State University</td>
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PROFESSIONAL EXPERIENCE AND ACADEMIC APPOINTMENTS:

1968-1971   Assistant Professor, Abilene Christian College
1971-1973   Associate Professor, Abilene Christian College
1973-1975   Visiting Scientist, The Jackson Laboratory
1975-1977   Staff Scientist, The Jackson Laboratory
1977-1983   Associate Professor, Texas A&M University
1983- Present   Professor, Veterinary Pathology, Texas A&M University
1987-Present   W.P. Luse Professor, Texas A&M University
1989-1996   Director, Center for Animal Genetics, Institute of Biosciences & Technology
1990-1993   Interim Asst. Department Head, Veterinary Pathobiology, Texas A&M University
2001-Present   Distinguished Professor, Texas A&M University
                Director, Center for Animal Biotechnology and Genomics, Texas A&M University
1978-Present Texas Genetics Society (President, 1989)
1993-Present Coordinator, USDA-NRSP8 Bovine Genome Program
1988-Present International Society for Animal Genetics (President, 2000-200)
1993-Present Human Genome Organization (HUGO)

AWARDS AND HONORS:

Elected to the National Academy of Sciences, USA, 1999
Wolf Prize in Agriculture, 2001
Alumni Citation Award, Abilene Christian University, 1983
Faculty Distinguished Achievement Award for Research, Texas A&M University, 1987
Carrington Award for Research in Cell Biology, 1990
McMaster Fellow, CSIRO, Australia, 1990
CIBA Prize for Research in Animal Health, 1993
Outstanding Texas Geneticist, Texas Genetics Society, 1996
Fellow, American Association for the Advancement of Science, 1999
Promoted to Distinguished Professor, Texas A&M University, 2001
Distinguished Service Award, Texas Genetics Society, 2006
ACU Alumnus of the Year, 2006
Bush Excellence Award for Faculty in International Research, Texas A&M University, 2008
Student-Led Award for Teaching Excellence, Texas A&M University System, 2009
Elected to Sports Hall of Fame, ACU, 2010

TEACHING EXPERIENCE:
Biomedical Sciences 405: Mammalian Genetics (3 credits; 45 contact hours), Professor
REFERREED PAPERS 2005-2010: (LAST 5 YEARS)
Appendix II. Sample 2+2 Articulation Agreement with a Community College

TEXAS A&M UNIVERSITY
College of Veterinary Medicine
Biomedical Science

2+2 Agreement
Between
Austin Community College and College of Veterinary Medicine and
Biomedical Science

This agreement serves to facilitate the admission and academic transfer of students from
Austin Community College to the Biomedical Science program (BIMS) in the Texas
A&M University College of Veterinary Medicine and Biomedical Sciences. As students
progress successfully toward the completion of the Associate of Science degree, this
agreement will ensure the seamless transition of students into the BIMS program
according to the provisions and conditions below:

1. Austin Community College students who complete the attached degree plan as
full time students will be admitted to the BIMS program automatically,
provided they meet all other general admission requirements (i.e., transcripts,
applications, time lines, deadline dates, etc.) for general admission to Texas
A&M University.

2. Students must have maintained no less than a cumulative 3.60 GPA in the
courses taken at Austin Community College, and will have completed the 67
hours of transferable course work on the attached degree plan.

3. Students must not have made any grade below a “B” in all of their Common
Body of Knowledge (CBK) science and math course work.

4. This agreement will be reviewed on an annual basis and may be amended by
mutual written consent of both parties by issuing an addendum to this
agreement.

5. This agreement will commence effective the Fall 2008 semester with
commitment of a five (5) year period.

EXECUTED IN TWO (2) original counterparts on this 21st day of July 2008.

Dr. Stephen Kinslow
President
Austin Community College

Dr. Donetta Goodall
Vice President Academic Transfer and
General and Developmental Education
Austin Community College

H. Richard Adams, DVM, PhD
Dean, College of Veterinary
Medicine and Biomedical Sciences
Texas A&M University

Texas Veterinary Medical Center
College Station, Texas 77843-4465 • (979) 845-4041 • FAX (979) 845-6739
# 2+2 Articulation Agreement
Texas A&M College of Veterinary Medicine and Biomedical Science—Austin Community College 2008-2009

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<td>HIST 1302</td>
<td>History of US II</td>
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<td>CHEM 1312/1112</td>
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<td>BIOL 1407</td>
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**TOTAL** | **67**
Appendix III. BIMS Scholarship Applications

Scholarships for U3/U4 students are given from the BSA Parents’ Association and various individual donors to Texas A&M University and the Texas A&M Foundation. These scholarships will be derived from the Fall 2011-Spring 2012 Continuing Student Application which is available from 10/15/2010 through a deadline of 2/1/2011. Please make sure that it is as complete as possible with extracurricular activities and financial need information. Consideration will also be given to leadership activities in campus organizations recognized by TAMU. All criteria should be met on 2/1/2011.

WEB LINK: http://scholarships.tamu.edu

1. Peter F. Meier Memorial Scholarship: $1000
   This scholarship is a competitive scholarship to be awarded to one student who meets the following criteria at the time of application:

   BIMS major
   Completed 24 hours total, at Texas A&M University, in the Fall 2010/Spring 2011 semesters
   U3 or U4 classification on 2/1/2011
   3.5 overall TAMU GPA on 2/1/2011
   Financial Need as determined by Student Financial Aid Department
   Active Member of B.S.A. Veterinary Branch or a TAMU recognized Pre-Vet Society on 2/1/2011.

   One student will be chosen for this Spring 2012 scholarship. The deadline is 2/1/2011 through the Continuing Student Application.

   The student who receives this scholarship will be notified by letter to their permanent address and @tamu.edu email. A block will remain on the recipient’s account until a thank you letter is written to Mr. and Mrs. Gregory Meier and provided to the BIMS office for mailing.

   Receipt of this scholarship does not preclude receipt of others listed.

   All winners must have complete grade reports at the time of the decision (No “I” or “X” grades for any of the courses listed on the transcript.)

CONTINUED ON THE NEXT PAGE
2. **Dr. and Mrs. Ralph Clark Dunn Memorial Scholarship: $1500**

   This scholarship is a competitive scholarship to be awarded to one individual who meets the following criteria at the time of application:

   - BIMS major
   - Completed 24 hours total, at Texas A&M University, in the Fall 2010/Spring 2011 semesters
   - U3 or U4 classification on 2/1/2011
   - Financial Need as determined by Student Financial Aid Department
   - Active Member of B.S.A. Veterinary Branch or a TAMU recognized Pre-Vet Society on 2/1/2011
   - 3.5 overall TAMU GPA on 2/1/2011

   One student will be chosen for this scholarship. The deadline is 2/1/2011 through the Continuing Student Application.

   The student who receives this scholarship will be notified by letter to their permanent address and @tamu.edu email. A block will remain on the recipient’s account until a thank you letter is written to the Dr. and Mrs. Ralph Clark Dunn Memorial Scholarship Office and provided to the BIMS office for mailing.

   Receipt of this scholarship does not preclude receipt of others listed.

   All winners must have complete grade reports at the time of the decision (No “I” or “X” grades for any of the courses listed on the transcript.)

3. **BSA Parents’ Association Scholarships**

   This scholarship is a competitive scholarship to be awarded to an individual who meets the following criteria at the time of application:

   - BIMS major
   - Completed 24 hours total, at Texas A&M University, in the Fall 2010/Spring 2011 semesters
   - U3 or U4 classification on 2/1/2011
   - 3.0 overall TAMU GPA on 2/1/2011
   - Financial Need as determined by Student Financial Aid Department
   - Active Member of B.S.A. on 2/1/2011

   The deadline is 2/1/2011 through the Continuing Student Application.

*Provided funds are available*
Students who receive a scholarship will be notified by letter to their permanent address and @tamu.edu email. A block will remain on all recipients’ accounts until a thank you letter (which will be posted at the Football tailgate meal) is written to the BIMS Parents’ Association.

All winners must have complete grade reports at the time of the decision (No “I” or “X” grades for any of the courses listed on the transcript.)

4. Alison Lindorfer, O.D. Endowed Biomedical Science Scholarship $2,000

This scholarship is to be awarded to one individual who meets the following criteria at the time of application:

BIMS major
15 hours completed at Texas A&M University in the Spring 2011
U.S. Citizen
U3 or U4 classification on 2/1/2011
Residency requirement (permanent residence on 2/1/2011)
-Allen, TX
-Collin County, TX
3.25 Overall TAMU GPA on 2/1/2011
Demonstrates leadership and social involvement at Texas A&M University, completes community service
Financial Need as determined by Student Financial Aid Department

One student will be chosen and notified by letter to their permanent address and @tamu.edu email account. A block will remain on the recipient’s account until a thank you letter to Mr. and Mrs. Arno Lindorfer is provided to the BIMS office for mailing.

The deadline is 2/1/2011 through the Continuing Student Application.

All winners must have complete grade reports at the time of the decision (No “I” or “X” grades for any of the courses listed on the transcript.)

*All scholarship offerings are pending funding becoming available.*
Scholarship Application for Biomedical Sciences Association (BSA)

BSA Scholarships
This scholarship is a competitive scholarship to be awarded to students who meet the following criteria on 2/1/2011.

BIMS major
Cannot be a BSA officer on 2/1/2011
Completed 24 hours total, at TAMU, in the Fall 2010/Spring 2011 semesters
U1 or U2 Status on 2/1/2011
Minimum 3.0 overall TAMU GPA on 2/1/2011
Active member of the Biomedical Sciences Association on 2/1/2011:
- Branch meetings attended
- Socials Attended
- Community Service

Students who receive a scholarship will be notified by mail at their permanent address and at their @tamu.edu email account. Funds will be deposited into their student account for the Fall 2011 semester.

The deadline for this application is 2/1/2011 on the Continuing Student Application at https://scholarships.tamu.edu

*In order to receive a scholarship, the student must complete a minimum of 24 hours of coursework at TAMU during the Fall 2010/Spring 2011 semesters. All winners must have complete grade reports at the time of the decision (No “I” or “X” grades for any of the courses listed on the transcript.)

**All scholarship offerings are pending funding becoming available.
## Biomedical Sciences

**Core Curriculum Requirements In:**
Catalog 201031     Year 2010-2011

This degree plan applies to Catalog 201031

### Appendix IV. BIMS Degree Plan

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# Common Body of Knowledge Courses

* Check with you Academic Advisor as to the best option regarding Core Curriculum, Free Electives, and professional school prerequisites.

** BIMS DIRECTED ELECTIVES: Courses that constitute the major are those offered by the College of Veterinary Medicine and Biomedical Sciences and/or are approved for Biomedical Sciences electives.

BIMS Directed Electives can include courses such as: Food toxicology, Immunology, Histology, Parasitology, Virology, Pharmacology, Cell Mechanisms of Disease, Nutrition, Public Health Practices, and Advanced Human Genetics.

Courses in (parenthesis) listed above are equivalent to the Texas Common Course Numbering System, used by Community Colleges in the State of Texas.
Instructor: Dr. Elizabeth Crouch
Course: BIMS/GENE 320 Biomedical Genetics
Office: Room 81-VTH/BIMS office
Course Time: TWR 12-1:30 Rm 101VTH
Office Hours**: By appt. through BIMS
**I will not be available one and 1/2 hours before class. When calling for appointments, please let Judy know that you are in my BIMS 320 course and are requesting a meeting to ask questions. Mornings will be best, as we will be registering incoming freshmen most afternoons.
Phone: 845-4941

Text: 1) Introduction to Genetic Principles by David Hyde
2) Case Workbook to accompany Human Genetics, 7th Edition by Ricki Lewis
3) CD-ROM: Biomedical Genetics (available in Media Resources: basement)
Other: CPS unit registered per instructions
Registration online at website for the text: www.mhhe.com/hyde Use classroom code B77-DE-687

General Description: This course is meant to be an introduction to the study of human genetics. The material will be divided into five primary areas: transmission, molecular, cyto-, population, and quantitative genetics. In addition, we will be examining various genetic diseases, including their underlying causes, detection, and treatment (if any). We will explore different medical and research advances that make use of genetic information; particularly those areas of research that are pertinent to the disease topics we discuss. We will also cover medical ethics with regards to advances in genetic technology, immunogenetics, cancer genetics and an introduction to genomics.

Detailed Objectives:
1. To understand and use Mendelian genetics to calculate probabilities of inheritance. To be able to recognize exceptions, making appropriate mathematical adjustments to inheritance models.
2. To learn various diseases and their inheritance mechanism. To apply biochemical and physiological concepts in order to describe disease phenotypes from the molecular level to gross presentation.
3. To describe normal developmental pathways and significant events occurring at each week of development. To understand and describe developmental pathways and events that impinge upon these pathways, including gross developmental outcomes.
4. To correlate development and cell cycle progression with cancer. To describe the specific pathways to development of select cancers.
5. To correlate cancer with immunologic response deficits. To describe genetic concepts of immune diversity, including step by step development of immunoglobulin chains.
6. To apply mathematical/statistical concepts to inheritance of multigenic/multiallelic traits. To determine phenotypes based upon multigenic/multiallelic traits.
7. To differentiate between single locus traits and multilocus traits. To differentiate between single locus traits and traits caused by regional chromosomal changes. To describe chromosomal changes at the molecular
level and relate these changes to phenotype at the cellular and organismal levels.

8. To use case studies to apply biochemical, physiological and genetic concepts to determine inheritance patterns, molecular mechanisms and treatment options. To also consider ethical issues/concerns and diagnostic tools available for treatment of specific conditions.

9. To describe tools/methodologies/techniques for looking at single genes, proteins, RNAs and whole genomes.

10. To describe DNA replication, including protein/protein interactions and pathways. To describe RNA transcription (T_c) and translation (T_L) of proteins. To determine points during which replication, transcription and translation can be regulated and negatively affected.

11. To look at populations of individuals in terms of gene contribution and with change over time. To apply Hardy Weinberg principals and mathematical concepts to populations of individuals in order to describe a population (and its changes over time).

12. To know basic concepts of genetic counseling, ethical and policy concerns.

Course Description from the Catalog: Mendelian inheritance, linkage and recombination, molecular basis of gene structure and function, mutation, polygenic inheritance, chromosomal aberrations and genetics of populations. Genetic and cytogenetic causes of congenital disease in humans and genetic counseling.

Prerequisites: Junior/Senior classification; BIMS major with a minimum overall 2.5 TAMU GPA; BIMS majors should have their CBK courses complete; non-BIMS majors that have instructor/BIMS office approval to take this course should have Biology 112 and CHEM 227/237 completed (preferred).

Grade: Your grade will consist of the following:
1. A participation grade of up to 30 points total that you will receive for case studies assignments
2. A participation grade of up to 50 points for completion of the CD-ROM questions and assigned questions in ARIS or Chapter Integration Problems
3. Up to 20 points total for in class participation quizzes largely derived from end of chapter questions (with new numbers/facts).
4. 300 points for three, 100-point exams
5. 100 point final

Total: 500 points

* You have permission to collaborate with others on your CD-ROM, Chapter Integration and case studies questions ONLY when outside of class. The assigned homeworks (CD-ROM, Chapter Integration and case studies) will be assessed by turning in selected assignments, by short quizzes at the start of class, and/or by a question or two on the exam following the due date of the assignment. This serves to assure me that you are completing your homework and that you are present in class. During all exams and
quizzes, you may **NOT** collaborate with your neighbor. **Any attempt to do so will be considered academic dishonesty.**

**End of chapter questions are a good way to study. The answers to even numbered questions is at [www.mhhe.com/hyde](http://www.mhhe.com/hyde). These questions will also be used for discussion in class periodically and are fair game for exam/quiz questions (in modified format).

***Quiz questions over the case studies, the CD-ROM, and end of chapter questions may be modified. Ex: I may create original questions pertaining to the same case study for the quiz in order to assess proper understanding of the material. Because work in the course is cumulative, concepts can be incorporated into questions at any time after the assignment is due.

Policies:

1. A university-excused absence is the *only* excuse acceptable for missing an exam or homework/participation quiz. For information regarding what constitutes an excused absence, please see [http://student-rules.tamu.edu/search/rule7.htm](http://student-rules.tamu.edu/search/rule7.htm). A link for the Explanatory Statement for Absence form (for absences less than three calendar days) is on this webpage as well. Make-up exams will be all essay and short answer questions. Late work is unacceptable, unless the student has a university-excused absence.

2. I will do my best to have the exams back to you within one week. Any exam questions you feel have been graded incorrectly (or that I mis-graded) may be resubmitted to me with a written explanation attached to the original exam. Please realize that any resubmitted exams (other than a simple mis-grade) are subject to a *complete* regrade.

4. Grade scale: 90-100=A, 80-89.99=B, 70-79.99=C, 60-69.99=D, less than 60=F

   **Note: Attendance counts and is expected!** Should a curve be necessary, I will curve exams *not* final course grades.

Other Notes

Academic Integrity Statements

AGGIE HONOR CODE

“An Aggie does not lie, cheat, or steal or tolerate those who do.”

Upon accepting admission to Texas A&M University, a student immediately assumes a commitment to uphold the Honor Code, to accept responsibility for learning, and to follow the philosophy and rules of the Honor System. Students will be required to state their commitment on examinations, research papers, and other academic work. Ignorance of the rules does not exclude any member of the TAMU community from the requirements or the processes of the Honor System.
For additional information please visit: http://aggiehonor.tamu.edu/

**Scholastic dishonesty will not be tolerated!** Any dishonesty will result in a zero for the exam or paper (i.e. Dishonesty includes plagiarism.). In addition, it is the university’s right to seek conduct probation, suspension, or dismissal from the university, as provided for in the Aggie Honor Code.

The Aggie Honor Code, definitions of academic dishonesty, and procedures for handling dishonesty cases may be found at http://aggiehonor.tamu.edu/. **I recommend all students read this!**

Texas A&M has very clear policies regarding discrimination (*The American with Disabilities Act is a federal act which all states and state institutions must comply with.*) and sexual harassment. Should you feel that you have a disability that requires accommodations to ensure a proper learning environment, you may contact the Office of Services for Students with Disabilities in the Department of Student Life Services. The American with Disabilities Act is as follows:

**Americans with Disabilities Act (ADA) Policy Statement**
The following ADA Policy Statement (part of the Policy on Individual Disabling Conditions) was submitted to the University Curriculum Committee by the Department of Student Life. The policy statement was forwarded to the Faculty Senate for information.

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact the Department of Student Life, Services for Students with Disabilities, in Cain Hall or call 845-1637.

There are formal processes for dealing with grievances concerning grades, scholastic dishonesty, failure to provide adequate learning environments, sexual harassment and discrimination. If there are major concerns about the conduct of this course (and an agreeable resolution can not be met between us), you may contact Dr. Landis, Rm 81 VTH. Alternatively, for disability and sexual harassment grievances, you may contact the Department of Student Life Services. For discrimination grievances, you may contact the Vice President of Student Affairs. For formal processes regarding scholastic dishonesty, please see the Honor Code website and the Student Rules and Regulations.

The CD-ROM for this course is provided to you by Media Resources. The author (professor) receives no monetary gain from your purchase of this product.
The aforementioned policies are in compliance with and derived from the TAMU Rules and Regulatory Compliance statements found in the policies and rules section of the TAMU website, as well as the website for the Aggie Honor System Office and the Dean of Faculties and Associate Provost Office.

## Lecture Schedule

This schedule will be followed as closely as possible. EXAM DATES will NOT be changed. If we get off schedule, ONLY the chapters covered on the exam will change. CD Rom Lessons and Case Studies are due as indicated. They will be assessed in class quiz/open note format, by turning in the assignment or on major exams.

*ARIS quizzes for participation will be assigned online and due as indicated.

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6/4     Chapter 3 (skip section 3.8), CD Rom Lesson #2 due 6/10;
* Last day to add/drop courses for 10 weeks; **MEET IN ROOM 330!**
6/9     Discuss chapter 3, Ch 4, selection of 21: 21.1; Chapter 4 Integration problem (in place of ARIS; counts towards participation and is due 6/11), case study: Acrocephalosyndactyly (due 6/11)
6/10    Ch 4 and 21 finish; Chapter 5, Case Study Chapter 5: Enamel Hypoplasia (not due until 6/16)
6/11    Chapter 5, Start Chapters 6 (skip section 6.4) and 7; Case study: Blue diaper Syndrome (**Note:** first question should read: Did the physician make the proper diagnosis concerning inheritance?) Due 6/17; I’ll have a handout on three point test crosses that is useful for mammalian systems
6/16    Chapter 7
6/17    Chapter 7 and 8; CD ROM Lesson #4 and Case Study: Williams Syndrome (Due June 24th)
6/18    EXAM #1 Chapters 1-7 (Room 330)
6/23    Chapter 8 continued; Chapter 9 (skip section 9.5) and CD Rom Lesson #1 due 6/25/09
6/24    Chapter 9 continued; Chapters 10 and 11; case study: Tay Sachs due 6/30/09
6/25    CH 10 and 11 (ARIS for chapter 11 not assigned; practice as you see fit) (Room 330)
6/30    Complete CH 11, Start 12, 13 (Skip “Plant Vectors”) CD Rom Lesson #3 due July 7, 2009
7/1     CH 12-14
7/2  **No classes for 10 week term courses:** no new assignments (first five week finals)
Skip Chapters 15 and 16

7/7  Finish chapters 13 and 14

7/8  Start CH 17; CD Rom Lesson 5 (Due 7/16)

7/9  EXAM #2 Chapters 8-14 (Room 330)

7/14  Finish CH 17

7/15  Chapter 18; case study: Bloom Syndrome Due 7/16/2009; Chapter 20.1 only; CH 19 (selected sections: Structure and Function of Mt, 19.2 up to Origin of Chloroplasts, 19.3 up to Mitochondrial Gene Transfer, 19.4 and 19.5);

7/16  19/20 (finish); Chapter Integration Problem Ch 19 due 7/22; start 21

**July 20th last day to Q drop for the 10 week session**

7/21  Finish CH 21

7/22  CH 23: case study 3-Methylglutaconic Aciduria, Type III  due July 23, 2009

7/23  Finish CH 23 and start CH 24 (skip 24.7)

7/28  CH 24; case study: Complex traits among the Hutterites (Due 7/29)

7/29  Finish CH 24

7/30  EXAM #3 Chapters 18-21, 23, 24

8/4  CH 22 (questions will be on the final)

8/5  Finish CH 22

**EXTRA CREDIT DUE** (it will not be accepted after 4pm today!)

8/6  Review: Challenge board; start studying for case studies to be questioned on final:
Complement Component 2 Deficiency # 1-5, Smith-Lemli-Opitz Syndrome # 1, 2, 5, 7, Tangier Disease (Assume Tangier Disease is AR); Silver Russell Syndrome; Hereditary Multiple Exostoses Review: question and answer;

**8/11: NOTE: 1-3pm FINAL EXAM (TUESDAY)**

FINAL EXAM is cumulative and all multiple choice + 1 short answer.
Extra Credit:

While I will not curve the final course grades, extra credit is available to those who wish it. The extra credit paper will be worth 5 points added to your class total. This is equivalent of 1 percentage point on your final grade. Example: 445 points is 89%. 445 + 5 = 450 = 90%. The extra is meant to roll a person up a letter grade, should they be borderline.

The point distribution given for the ARIS, CD-ROM, Chapter Integration Problems, participation quizzes and case studies are maximum points. For each assignment that you do above and beyond the maximum number of points, ½ a point of extra credit will be given. The maximum number of “extra” assignments that can be done for credit is 10, for a total of 5 points added to your class total.
INTRODUCTION

INSTRUCTORS AND STAFF

Dr. Balaji Ramanathan BVSc, MS, PhD [Course coordinator]
269 VMS
Email: balaji@cvm.tamu.edu
Phone: 979-845-6869 (Office)
979-393-8385 (Cell)
Fax: 979-847-8981

Laboratory Instructors
Dr. Michelle Pine (faculty)
Dr. Les Dees (faculty)
Pei-San Huang
Ted Wing

Undergraduate TAs
Hugh Butler
Samantha Pulliam

OFFICE HOURS (Balaji)

Monday - Thursday: 1 - 2 pm.

Students can drop in anytime during weekdays, if I am available, I would be happy to assist.

Appointments will gladly be made to answer questions or discuss problems with individuals or groups of students.

Throughout laboratory sessions is also an excellent time to ask questions.

Feel free to call me in my cellphone.

CLASS TIMES

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<tr>
<td>Lecture</td>
<td>M, W 8:00-8:50 AM</td>
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<td>Laboratory</td>
<td>M, W 9:00-11:00 AM</td>
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LOCATION

Lectures: building 507 (VMS), Room 201. Laboratory: building 507 (VMS), Room 157.

COURSE DESCRIPTION
INTRODUCTION

VIBS 305 is a comprehensive mammalian gross anatomy course, using dog as the model species. Course will utilize both lectures and laboratory dissection. Veterinary nomenclature with human correlates will be emphasized along with relevant physiology inorder to facilitate structure & function relationship. Brief clinical relevance will be provided. Prerequisites: U3, U4, U5 classification,

OBJECTIVES

Upon course completion you should be able to:

1. Define and use anatomical nomenclature.
2. Identify normal gross anatomical structures with basic functions.
3. Relate anatomic structures to common clinical conditions.
4. Read anatomical description and visualize structural relationships.
5. Dissect

TEXTBOOKS, RESOURCES AND EQUIPMENT

Required texts:
- Lab dissection guide (sold in CVM media resources)
- Lecture notes (sold in CVM media resources)

Required equipment:
- #3 or #4 scalpel and blades
- surgical scissors (6 inch)
- rat-toothed forceps
- metal probe
- disposable gloves
- standard small bath towel
- Lab coat

Suggested resources (MSL reserves):
- Miller’s Anatomy of the Dog (3rd edition) - H.E.Evans

Computer references:
- Room 28A, Bldg 1026 (VMA)
  M-Th: 8:00 am - 9:45 pm
  Fri: 8:00 am - 5:00 pm
  Sat: 9:00 am - 12:45 pm
  Sun: 3:00 pm - 9:45 pm

Websites:
- http://www.vetanatomy.org
INTRODUCTION

http://vanat.cvm.umn.edu/carnlabs

GROSS ANATOMY LABORATORY STUDY HOURS

Mon - Thurs  8:00 am to 9:45 pm
Friday        1:00 pm to 5:00 pm
Saturday      9:00 am to 12:45 pm
Sunday        3:00 pm to 9:45 pm

The veterinary students have class in the gross labs most afternoons. However, if you check with the
instructor in charge, you can usually study in the small outer lab. The lab will close at 4:45 the night
before all vet student exams and will remain closed the next day. It will close at 3 the day before the
Wednesday 305 final exam and at 5 the day before the Thursday 305 lab final exam and it will be
closed the mornings 305 exams are given. These dates are included in the attached laboratory sched-
ule and will be posted in the gross lab.

EXAMS & GRADES

There is no distinction between lecture and lab material. As they complement each other, ex-
amins will reflect content from both lecture and dissection guide material. Final exam is comprehensive.
Other exams will partially include material from the syllabus for previous exams.

2 lab exams @ 50 points each  100
2 lecture exams @ 50 points each  100
2 in class quizzes (10 each)       20
Final lab exam                    100
Final lecture exam                 100

420 total points

Unannounced in-class quizzes (2 in class quizzes) will be given during scheduled lecture periods.

In the event of a question concerning the accuracy of an answer, it is your responsibility to provide an
acceptable reference to support your answer. Any
discussion concerning a question on the lecture (written) examinations must occur within 1 week
of when the exams are returned with a written jus-
tification. For laboratory exam questions, it must
occur while the question is still tagged.

Grades will be determined on a straight per-
centage basis from the total possible 420 points. If nec-
essary decimal points will be rounded up based
on standard mathematical guidelines. There is no
“curve” in this class.

Example:

Round up: If the next place beyond where
the decimal is terminated is greater than or
equal to 5, we round up. Say, score is 339.5. It
will be rounded up to 340.

Round down: If the number to the right of
terminating decimal place is 4 or less, it will
be rounded down. Say, score is 366.4. It will
be rounded to 366.

90 - 100.0%  A (378 points
and above)
80 - 89.9%   B (336 - 377 points)
INTRODUCTION

70 - 79.9%  C (294 - 335 points)
60 - 69.9%  D (252 - 293 points)
< 60%       F (251 points and less)

Make-up exams and quizzes will be given for university excused absences only and excuses must be verified by the director of the Biomedical Sciences Program. Documentation of medical excuses must be signed by a physician and indicate the date and time you were seen and include a statement that you were too sick or contagious to attend class at the time the exam or quiz was given. In order for a make-up exam to be given, documentation of the absence must be provided by the end of the next working day after the absence. (University regulations 7.1 to 7.5). If the student has not scheduled a make-up exam with instructor within those days, no make-up exam will be given and the student receives zero points. The time and place for make-up exams and their format will be determined by the instructor.

ATTENDANCE

Attendance at all lectures and laboratories is expected. University regulations allow students with an excessive number of absences (excused or unexcused) to be removed from the class (University regulation 7.8). Because there is no required textbook for this class, the information presented in lecture is essential if you are to understand the material. This class is primarily a laboratory class, so your participation in lab is also important. If you come to lecture and laboratory on a consistent basis, you will probably do well in the class.

TEACHING METHODS

Lectures: Lectures will cover some of the more important basic anatomical concepts and generalities as well as clinically applicable information. The student should come to lecture prepared to listen, ask questions, and take notes. This whole process will be much more profitable and enjoyable (i.e. you can learn more effectively during lectures and laboratories) if reading has been accomplished prior to coming to class, and if you are able to keep up with the materials in previous lectures and laboratories. Questions by students are always appropriate during any lecture, lab or mutually agreeable time outside of the regularly scheduled course and are very much encouraged. Lectures are also meant to complement the laboratory sessions.

Laboratories: Always try to have the day’s laboratory assignment read once before coming to lab. This will hasten and improve the dissection experience and prevent “cookbook” errors.

Demonstrations: There maybe some live or videotaped demonstrations.

Tutorials: Periodic tutorial sessions will be held. New information will not be provided, but information provided in regular classes will be revisited. Attendance is not mandatory, but will be beneficial.

Internet: Another critical component of the course is the usage of the web. Exclusive web – http://www.vetanatomy.org can be used as a medium to interact with the instructor and as well as other students. Supplemental materials for the course may be posted.

Independent Study: Each student should take an active role in his or her own education. This is critical in this course and in your veterinary education in general. Independent study can be done alone or in small groups. Maximum use should be made of the formalized specimens, other specimens in the laboratory, required texts, library texts and journals, computer programs and slides and tapes on reserve in the library.

Additional hours: If necessary, off-class hours, particularly for laboratory instruction can be provided during weekend. Appointment is necessary.
INTRODUCTION

LABORATORY PROCEDURES

TABLE ASSIGNMENT

Three or four students will be assigned to a dog cadaver. Students in each group should be actively involved in the following duties in a rotating system: dissection, assisting dissection and reading. All members should read the material ahead of the class time.

Each week’s dissection should be finished before proceeding with the next week’s dissection. Sufficient lab time is provided each week to finish the assigned dissection. If you finish early, the time should be used reviewing, quizzing one another, and looking at other cadavers while instructors are present to answer questions.

CADAVERS

The cadavers represent a considerable investment and should be cared for properly. They will also be used for the examinations, so the quality of examination specimens depends on the quality of dissection you do and the care you take of your cadaver. The use of animal cadavers in this course is a privilege. It is requested that all students conduct themselves in a professional manner in the handling of their cadavers. Even though these animals are no longer alive, I would hope that everyone will still extend to them the degree of respect which they deserve. The best way to be respectful of all life is to appreciate the complexity of form and function. To do so requires dedication and devotion to your studies. Please realize that not all of the cadavers will be perfect. If there is severe distortion or alteration of a specific organ or region, your group will need to work with another group during that area of dissection. It is important to return the specimens to a tightly closed plastic bag between dissections. Not doing so will result in gradual desiccation of the specimen, especially the distal extremities, rendering the specimen useless.

It is important to retain skin flaps as it will be used to close up the specimen between dissections and keep the animal moist.

Wrap specimens with wetting-solution soaked towels, and spray frequently with wetting solutions.

CLEAN-UP

Each group is responsible for cleaning its own table and tissue and trash bucket and the area surrounding its table at the end of each laboratory period. In addition, a schedule will be posted indicating when each group will be responsible for general cleanup. This will include sweeping and/or hosing down the floor and cleaning the sinks.

BONE BOX

Each laboratory group will be issued a box containing a complete dog skeleton. This box should be brought to class every laboratory session. At the end of the semester, the members of each group will be financially responsible for any missing or broken bones from the box, even if they are no longer enrolled in the class. The bones must be paid for before grades will be issued for the members of the group. Students who do not return the bone box can be blocked from registration. If a person does not wish to assume this responsibility, he or she does not have to use the bones issued to the group; there are some bones available in the lab. If you are going to be absent from lab for an extended period of time, please be sure to give the bone box to one of your lab partners.

The cadavers, bones, and models (other than those issued to individual groups) are intended for use in the laboratory only and are not to be removed from the lab. To take them out of the laboratory not only deprives your classmates of the opportunity to use them, but may also create an unfavorable impression among one’s colleagues outside of the class.

No cameras or any other gadget that records pictures and videos are to be used in the gross lab. We are extremely fortunate to have access to these donated cadavers and the dissemination of pictures of the dissected cadavers is not showing them the degree of respect that they deserve.
TEXT RESOURCES

Several resources for the material provided in this book are highlighted here. However, this list is not exhaustive. Students are quite welcome to explore, but these books are NOT required for the course.

- Black’s Veterinary dictionary.
- Dyce et al. Textbook of Veterinary Anatomy Philadelphia: WB Saunders. This is a comparative anatomy book.
- De Lahunta A, Habel R. Applied Veterinary Anatomy. Philadelphia: WB Saunders. This is a good reference source for clinical anatomy of both small and large animals.
- Popesko P. Atlas of Topographical Anatomy of the Domestic Animals. Philadelphia: WB Saunders. This is an excellent color atlas and can be useful during dissection.
- Scanlon VC and Sanders T. Essentials of Anatomy and Physiology. 5th Edition.
- Getty R. Sisson and Grossman’s The Anatomy of the Domestic Animals. Philadelphia: WB Saunders. This book has been the world-class text for almost 100 years. An excellent source for reference on small and large animal anatomy. Unfortunately, this book is out of print.

PERSONAL APPEARANCE

This class is part of a curriculum preparing students for careers in medical or related professional fields. Students are expected to be attired accordingly. It is, however, a laboratory class that can become rather messy and smelly. The use of protective clothing such as smocks or lab coats is required. Open toe shoes are not to be worn in the lab. Written guidelines for student safety will be provided and a Student Safety Contract must be signed before you will be allowed to participate in the laboratory.

ACADEMIC INTEGRITY STATEMENT
INTRODUCTION

“An Aggie does not lie, cheat, or steal
or tolerate those who do.”

Academic dishonesty in any form will not be tolerated and will be dealt with in accordance with university regulations. According to the Aggie Honor Code, academic dishonesty includes, but is not limited to, observing the work of another student during an exam, knowingly allowing another student to observe your work during an exam, consulting references during an examination or informing another person of the content of an exam prior to its being given. It also includes removing teaching materials from the laboratory (except for bone boxes checked out to individual groups), falsification of documents concerning absences, removing test materials from an exam unless authorized by the instructor, or any other action that gives one person an advantage not available to everyone in the class. Students are encouraged to review the Aggie Honor Code, which can be found at www.tamu.edu/aggiehonor. Not only does this document give specific definitions of what constitutes academic dishonesty, it explains the process for dealing with alleged violations of the code. More importantly, it explains the process whereby students can assume the responsibility for enforcing the code for all students.

AMERICANS WITH DISABILITIES ACT STATEMENT

The American with Disabilities Act (ADA) is a federal antidiscrimination statute that provides comprehensive civil right protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact the Department of Student Life, Services for Students with Disabilities in room B118, Cain Hall, or call 845-1637.

Food and drink. Please do NOT bring any food or drink into the laboratory.

Minors. No one under the age of 18 years (ie siblings or friends) is allowed in the laboratory without prior permission and arrangements with the instructor.

RESPONSIBILITIES

We must try to conduct the laboratories in the safest manner possible. Things to keep in mind include: placing all scalpel blades and other sharp objects in the sharps container, keeping the dissection area as clean as possible, keeping the floor free of substances which may make it slippery and using care when placing specimens in or taking out of the cooler. Be especially careful not to drip liquid on the floor which then becomes a slipping hazard.

Students are strongly encouraged to read and follow TAMU safety policies and procedures

Appropriate disposal of waste should be strictly followed in the lab.

Remember that there may be guests in the laboratory at any time day or night. These guests may include friends, relatives or dignitaries. Thus, we want to keep the laboratory at all times as clean and neat as possible. We also want to conduct ourselves in a professional manner at all times.

Eating and drinking are not allowed in the laboratory. The veterinary complex is a smoke and tobacco free area.

HAZARDOUS CHEMICALS STATEMENT

Exposure to hazardous chemicals
Please be warned that our embalming fluids contain phenol and formaldehyde.

**Phenol:** Caustic and toxic; readily absorbed through skin contact; if contacted wash thoroughly.

**Formaldehyde:** An “experimental carcinogen, tumorigen and teratogen” by ingestion, skin contact, and inhalation. Additionally it can cause severe skin irritation upon contact; if contacted, wash thoroughly.

**Pregnant Women:** By definition all chemicals are toxic. We have strived to make the laboratory as safe as possible. As long as proper precautions are taken (e.g. Washing hands) you exposure levels to these chemicals should not cause a problem. Pregnancy introduces an entirely new set of variables. Currently exposure levels which may cause harm to your unborn child are unknown. We assume that these chemicals can pose a real threat to your unborn child. We also consider that exposure of an unborn fetus to an avoidable hazard is unacceptable. As stated above, formaldehyde is an experimental carcinogen, tumorigen, and teratogen by ingestion, skin contact, and inhalation. This presents a significant hazard for pregnant women. If you are pregnant or become pregnant while enrolled in this class, please notify the instructor as soon as possible. We will strongly encourage you to seek professional advice from your physician. We will do our best to help you make arrangements to take this course at a later date, if you decide to withdraw from the class. We cannot prohibit you from continuing with the course as the law states that the decision is totally yours to make. However, should you decide to continue in the course while pregnant, Texas A&M University cannot accept responsibility for any harm that befalls you or your child. Should you choose to continue in the course you do so at your own risk and against the advice of TAMU.

**Other hazards:** Soft contact lenses:- Soft contact lenses are gas permeable, which allows formalin fumes to enter the lenses and to expose your corneas causing severe irritation. We recommend that you do NOT wear soft contact lenses in the lab. However, if you do wear them, please be very cautious about any eye irritation. Sandals:- Please do NOT wear sandals in the anatomy laboratory.

**ACKNOWLEDGEMENT**

I thank Dr. M.S.A. Kumar (Tufts University) for generously providing some of the lecture laboratory material.
INTRODUCTION

GENERAL LABORATORY SAFETY GUIDELINES FOR VIBS GROSS ANATOMY LAB

- Wear gloves at all times while handling/dissecting cadavers and other tissues. Either latex or nitrile gloves are acceptable. Avoid touching your face and eyes. If embalming or wetting solutions accidentally contact your skin, please flush immediately with fresh running water.

- Wear appropriate protective clothing. No open-toed shoes are allowed. Shoes must completely cover your feet. A lab coat or coveralls must be worn at all times in the gross anatomy lab over your “street clothes”. Acceptable “street clothing” includes 1) shirt/blouse/scrub top and long pants, or 2) complete scrubs. If women wear skirts or dresses, they must be at least knee-length AND a full length lab coat must be worn. If shorts are worn, they too must be at least knee-length AND a full length lab coat must be worn.

- Material Safety Data Sheets (MSDS). Know where the MSDS sheets are located in the lab.

- Dispose of sharps properly. Dispose of suture needles, hypodermic needles (do not recap needles), and scalpel blades in the red sharps containers. If any of the sharps containers appear to be over ¾ full, please notify an instructor.

- Notify instructor immediately if any of the following occur: 1) you accidentally splash embalming or wetting solutions in your eyes, 2) you have any adverse breathing or skin reactions, or 3) you accidentally cut yourself.

- Do not operate any of the machinery in the gross anatomy lab. This includes powered hoists, band saws, pumps, and floor scrubbers.

- Do not eat, drink, use tobacco products, or apply cosmetics in the lab.

- Avoid all horseplay in the lab.
INTRODUCTION

LABORATORY SAFETY RULES - STUDENT SAFETY CONTRACT VIBS 305

The gross anatomy teaching laboratory (GATL) can be a safe place to work if appropriate safety precautions are taken. The principle hazards relate to contact with the chemicals in the embalming solutions and sharps. Therefore, most safety issues relate to these two hazards. If you are pregnant, or become pregnant, please contact Dr. Balaji Ramanathan immediately.

Adhere to the following safety rules to help ensure your safety and the safety of your classmates. Failure to comply with the following safety rules will result in your dismissal from the anatomy lab until the situation is corrected.

1. LEARN WHERE SAFETY FEATURES ARE LOCATED: eyewash station, first aid kits, Material Safety Data Sheets (MSDS), fire alarm, fire extinguisher, and exits.

2. DO NOT BRING NONESSENTIAL BOOKS AND CLOTHING TO THE GATL. If at all possible, please do not bring backpacks, purses, and valuables to the lab.

3. GLOVES MUST BE WORN AT ALL TIMES WHILE HANDLING OR DISSECTING CADavers AND OTHER TISSUES. If you have a latex allergy, or develop one, please notify Dr. Balaji Ramanathan immediately.

4. DO NOT EAT, DRINK, OR USE TOBACCO PRODUCTS IN THE GATL. Along the same lines, avoid touching your face and eyes while you dissect. Never apply cosmetics or handle contact lenses in the lab (except when solutions are accidentally splashed into the eyes and flushing is required).

5. LABORATORY ACCESS IS RESTRICTED. Do not bring friends, family or pets into the anatomy lab without prior permission from Drs. Dees, Pine or Ramanathan.

6. WEAR APPROPRIATE PROTECTIVE CLOTHING OVER YOUR “STREET CLOTHES.” NO OPEN-TOED SHOES ARE ALLOWED. Shoes must completely cover your feet. A LAB COAT OR COVERALLS MUST BE WORN AT ALL TIMES IN THE GROSS ANATOMY LAB OVER YOUR “STREET CLOTHES.” ACCEPTABLE “STREET CLOTHING” INCLUDES: 1) shirt/blouse/scrub top and long pants, or 2) complete scrubs (top and bottom). If women wear skirts or dresses, they must be at least knee-length AND A FULL LENGTH LAB COAT MUST BE WORN. IF SHORTS ARE WORN, THEY TOO MUST BE AT LEAST KNEE-LENGTH AND A FULL LENGTH LAB COAT MUST BE WORN.

7. BE CAREFUL OF WET AND SLIPPERY FLOORS. The GATL floors are hosed down several times during the day. If the floors are wet, please use caution to avoid slipping.

8. FOLD AND PUT AWAY CADAVER BAGS UNDERNEATH THE LAB TABLES. DO NOT place cadaver bags on the floor. They are extremely slick and represent a significant hazard to people walking in the anatomy lab. Please fold them up each day and place them on the small shelf immediately beneath your lab table top.

9. DO NOT OPERATE ANY OF THE MACHINERY IN THE GATL.

10. REPORT ANY ACCIDENTS, NO MATTER HOW MINOR, TO Dr. Balaji Ramanathan IMMEDIATELY.

11. PLEASE TAKE NOTE OF THE FOLLOWING DISPOSAL SITES:

   a. Hoppers – hoppers are located in the anatomy cooler. ALL ANIMAL TISSUES must be disposed of in the hoppers, NOT THE TRASH.

   b. Sharps containers – red containers at the front (between the sinks) of lab and in the back of the lab. Dispose of suture needles, hypodermic needles (do not recap needles), and scalpel blades in the sharps containers.

Appendix V. Syllabi for Core Upper Division Courses
c. General trash – paper towels, gloves, and string (i.e., general trash) should be disposed of in the large gray trash cans.

I HAVE READ AND UNDERSTAND THE SAFETY RULES AND AGREE TO FOLLOW THESE RULES WHILE WORKING IN THE GROSS ANATOMY TEACHING LABORATORY. I HAVE LOCATED ALL EMERGENCY EQUIPMENT. I UNDERSTAND THAT I MAY BE DISMISSED FROM THE GATL FOR FAILURE TO COMPLY WITH THE ESTABLISHED SAFETY PROCEDURES FOR THIS LABORATORY.

NAME (PRINT):
NAME (SIGNATURE):

ID NUMBER:
DATE:
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NAME (PRINT):
NAME (SIGNATURE):

ID NUMBER:
DATE:
## LECTURE SCHEDULE

<table>
<thead>
<tr>
<th>Date</th>
<th>Lecture topics</th>
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<tbody>
<tr>
<td>Aug 30, Mon</td>
<td>Introduction</td>
</tr>
<tr>
<td>Sep 1, Wed</td>
<td>Concepts (Lec#1)</td>
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<td>Sep 6, Mon</td>
<td>Concepts (Lec#2)</td>
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<tr>
<td>Sep 8, Wed</td>
<td>Thoracic limb - I (Lec#3)</td>
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<td>Sep 13, Mon</td>
<td>Thoracic limb - II (Lec#4)</td>
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<td>Sep 15, Wed</td>
<td>Pelvic limb - I (Lec#5)</td>
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<td>Sep 20, Mon</td>
<td>Pelvic limb - II (Lec#6)</td>
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<tr>
<td>Sep 22, Wed</td>
<td>Review</td>
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<td><strong>Sep 27, Mon</strong></td>
<td><strong>Lecture exam – 1</strong></td>
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<td>Sep 29, Wed</td>
<td>Respiratory system (Lec#7)</td>
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<tr>
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<td>Oct 18, Mon</td>
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<td>Oct 20, Wed</td>
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<td>Oct 27, Wed</td>
<td>Review</td>
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<td>Nov 24, Wed</td>
<td>Cranial nerves - I (Lec#21)</td>
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<td>Cranial nerves - II (Lec#22)</td>
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<td>Dec 1, Wed</td>
<td>Review</td>
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<tr>
<td><strong>Dec 10, Fri</strong></td>
<td><strong>Final Lecture Exam (10 AM - noon)</strong></td>
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## LAB SCHEDULE

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Page numbers (indicated within parenthesis) - Laboratory dissection guide.
Biomedical Microbiology Syllabus

Charles M. Scanlan

Fall Semester, 2010

Course Credits
VTPB 405 has 5 credits.

Prerequisites
Junior classification is required.

Description
Lectures emphasize the fundamentals of bacteriology, immunology, mycology, virology and selected infectious diseases of humans and domestic animals. Laboratories emphasize the culture and identification of selected bacterial and fungal pathogens of humans and domestic animals.

Course Coordinator
Charles M. Scanlan DVM, PhD
Office: Room 206D, VMS Building
Office Hours: By appointment
Phone: 979 260-9356
E-mail: cscanlan@cvm.tamu.edu

Laboratory Biosafety Coordinator
Ken Turner, VMD, MS
Office Hours: By appointment
Phone: 979 204-3149
E-mail: kturner@cvm.tamu.edu

Laboratory Technician and Grader
Ms. Patsy Story
Office: Room 211, VMS Building
Office Hours: By appointment
Phone: 845-4158
E-mail: microteach@cvm.tamu.edu

Laboratory Technician
Ms. Carrie Stokes
Office: Room 211, VMS Building
Office Hours: By appointment
Phone: 845-4158
E-mail: microteach@cvm.tamu.edu

Class Attendance
Class attendance is required.
A student must attend their scheduled laboratory. For a student to work in the laboratories at times not scheduled, the student must receive permission from Ms. Story.

Academic Integrity
Students are expected to abide by the aggie honor code (http://www.tamu.edu/aggie honor)

American with Disabilities Act
American with Disabilities Act is a federal anti-discrimination statute that provides
comprehensive civil rights protection with disabilities. Among other things, that all students with disabilities be guaranteed a learning environment that provides reasonable accommodation. Contact the Department of Student Life, Services for Students with Disabilities in room 206, Kloodus Building, or call 845-1637.

**Family Educational Rights and Privacy Act**

Family and Educational Rights and Privacy Act provides safeguards on your privacy by preventing the dissemination of information about your performance in the course without your permission in any way that might make information available to other students. Thus each student will be issued a 3-digit test identification number unique to this course to be used in any communication with the instructors and posting of grades.

**Lecture Schedule**

MW 1:50 pm - 3:05 pm, Room 201, VMS Building

**Laboratory Schedule**

Section 501: TR 8:00 - 9:40 am, Room 210, VMS Building  
Section 502: TR 10:00 - 1140 am, Room 210, VMS Building  
Section 503: TR 1:00 - 2:40 pm, Room 210, VMS Building  
Section 504: TR 3:00 - 4:40 pm, Room 210, VMS Building

**Biosafety Quiz (10 questions)**

A student must score 7 or more points (passing score) on the biosafety quiz to be qualified to enter the microbiology teaching laboratories. If a student fails the biosafety quiz, the student must reschedule the biosafety quiz with Ms. Patsy Story.

**Course Materials (available on-line)**

Biomedical Microbiology Fall Syllabus  
Biomedical Microbiology Report Forms  
Biomedical Microbiology Laboratory Manual  
Biomedical Microbiology Lecture Notes  
Biomedical Microbiology List of Graphics  
Biomedical Microbiology Graphics  
Examination 1 Period, Examination 2 Period, Examination 3 Period, Examination 4 Period  
Examination Format  
Examination Review Form

**Make-Up Examinations**

Examinations will be given at the beginning of class on the days listed.  
Students that are more than 15 minutes late but less than 30 minutes will be penalized 20 points and allowed to take the examination without extra time.  
Students that are more than 30 minutes late will receive 0 points for the examination.  
Students showing up more than 30 minutes late for a scheduled laboratory with allotted points will be penalized 10 points. The student will be allowed to complete the laboratory without extra time.  
All make-up examinations and laboratories require a university excused absence signed by the student’s academic advisor. All approved absences must be submitted to Ms. Story who will schedule the make-up examination or laboratory.  
All laboratory reports must be submitted by 3:00 pm on Friday. Late reports will not be accepted or graded. Laboratory reports not properly identified by laboratory unknown number (3-digits) and test identification number (3-digits) will not be graded and will
receive 0 points.

Laboratory instructors will provide information on how to label the laboratory report grading sheets.

**Review of Examinations**

Students will have the opportunity to review examinations 1, 2 and 3 during the first scheduled laboratory period after the examination. For examination 4, students will have an opportunity to review the examination after the final examination during times announced during the final examination by Dr. Scanlan or Ms. Story. If a student has any grading concern at these times, the student must submit an Examination Review Form to Ms. Story for reevaluation. The purpose of the examination review form is to provide the opportunity to challenge any question. The student should clearly explain why his/her answer is correct and document the source of the question based on the Laboratory Manual, Lecture Notes, or Dr. Scanlan’s class presentations. The form needs to be completed and submitted on the same day the examination is handed back to the student for their review. Dr. Scanlan will evaluate each disputed question and the examination review form will be returned to the student within 5 class days.

**Microbiology Laboratory Safety Rules**

The microbiology laboratory can be a safe place to work if appropriate safety precautions are taken.

Many microorganisms when given the opportunity and proper conditions can be dangerous to your health. It is imperative that you keep this in mind and that you treat all microorganisms with the respect they deserve.

Please adhere to the following safety rules to help ensure your safety and the safety of your classmates. Failure to follow laboratory safety rules will result in a warning for the first violation and a 5-point deduction from the final grade for all subsequent violations.

Learn where laboratory safety features are located (fire extinguisher, eyewash, first-aid kits, fire alarm, exits and emergency phone).

Keep nonessential books and clothing in the assigned lockers.

If you have an allergy to latex or molds, please notify Dr. Scanlan, DR. Turner or Ms. Patsy Story.

Use of any tobacco product, eating or drinking in the laboratory is strictly forbidden.

Keep pencils, fingers, and other objects out of your mouth, ears, eyes and nose.

Never apply cosmetics or handle contact lenses in the laboratory. Artificial fingernails are not allowed if they preclude safe handling of laboratory cultures or equipment.

Students who wear contact lenses are strongly encouraged to wear their glasses in the laboratory. Persons wearing contact lenses should wear protective goggles.

Laboratory access is restricted. Do not bring friends, family or pets to the laboratory.

Shoes are required and open-toe shoes and flip-flops are not allowed in the laboratory. Gloves should be worn if skin is broken or a rash is present, after use, discard the latex gloves in the biohazard bags not the trashcan.

Mouth pipetting is forbidden.

Wipe off your tabletops with disinfectant both before you begin work and after you have finished for the day.

Wash your hands with soap and water after you work in the laboratory, or if you leave the laboratory, for any reason. If you have put on protective gloves for any reason, wash your
hands after removing the gloves.

Do not take any cultures out of the laboratory for any reason. It is absolutely forbidden to remove cultures from the laboratory. If you have a question of the instructor when working with cultures, find your instructor and bring him/her to the laboratory to answer questions.

Report any accidents (broken glass, cuts or spills) to the instructor.

Exercise caution near Bunsen burners. Tie long hair back and turn off burners when not in use.

Dispose of contaminated or used materials quickly in the red biohazard bags. Materials containing bacteria must be autoclaved before disposal. Therefore, no cultures should be poured down the sink. Place any contaminated paper in the biohazard bags, not in the trash can.

Please take note of the following disposable sites (biohazard bags, sharps container and plastic tubs).

After completing a laboratory exercise, discard all materials in appropriate location. Place your cultures in your assigned rack and incubate in your assigned incubator.

**Content of Examination 1**

**Lecture Note Chapters:** History of Microbiology, Microscopy, Gram, Kinyoun and Ziehl-Neelsen Stains, Bacterial Classification and Nomenclature, Bacterial Structure and Function, Bacterial Virulence Factors, Bacterial Infection and Immunity, Normal Bacterial Flora, Bacterial Infections of Body Systems and Tissues, Antibiotics and Antibacterial Drugs, Antiseptics, Disinfectants and Sterilization Methods

**Laboratory Manual Chapters:** Cellular Characteristics and Atmospheric Growth Requirements, Biochemical Characteristics, Gram Stain, Kinyoun Stain and Ziehl-Neelsen Stain, Inoculation Procedures, Motility Tests, Biochemical Tests

**Content of Examination 2**


**Laboratory Manual Chapters:** Examination 1 chapters plus Aerobic Gram-positive Cocci, Aerobic Gram-positive Bacilli, Aerobic Gram-positive Acid-fast Bacilli. Aerobic and Anaerobic Gram-positive Sporeforming Bacilli

**Content of Examination 3**

**Lecture Note Chapters:** Examinations 1 and 2 chapters plus Genus *Neisseria*, Family Enterobacteriaceae, Genus *Escherichia*, Human Enterotoxigenic *Escherichia coli* Infections, Genus *Salmonella*, Human Typhoid, Porcine Salmonellae Enterocolitis,

**Laboratory Manual Chapters:** Examinations 1 and 2 chapters plus Aerobic Gram-negative Cocci, Family Enterobacteriaceae, Family Pasteurellaceae, Aerobic Gram-negative Bacilli, Aerobic Gram-negative Helical Bacilli, Anaerobic Bacilli and Cocci

**Content of Examination 4**

**Lecture Note Chapters:** Examinations 1, 2 and 3 chapters plus Obligate Intracellular Bacteria, Family Chlamydiaceae, Feline Pneumonitis, Family Rickettsiaceae, Human Endemic and Epidemic Typhus, Canine Ehrlichiosis, Aerobic Gram-negative Cell Wall-free Bacteria, Genus *Mycoplasma*, Bovine Contagious Pleuropneumonia, Porcine Enzootic Pneumonia, Mycology Classification, Mycotic Diseases of Humans and Animals, Diagnostic Procedures for Fungi, Human Candidiasis, Feline Cryptococciosis, Human Dermatophytosis, Human Zygomycosis, Canine Blastomycosis and Histoplasmosis, Canine Coccidiomycosis, Antifungal Antibiotics and Drugs, Animal Viruses, Antiviral Drugs

**Laboratory Manual Chapters:** Examinations 1, 2 and 3 chapters plus Aerobic Gram-negative Cell Wall-free Bacteria, Aerobic Obligate Intracellular Bacteria, Antimicrobial Susceptibility Testing Method

**Examination Schedule**

<table>
<thead>
<tr>
<th>Examination</th>
<th>Date</th>
<th>Time</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Biosafety Quiz (0 Points)</strong></td>
<td>Thursday, September 2, 2010</td>
<td>VMS Building, Room 210</td>
<td></td>
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<tr>
<td><strong>Examination 1 (80 Points)</strong></td>
<td>Wednesday, September 29, 2010</td>
<td>VMS Building, Room 201</td>
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<tr>
<td><strong>Examination 2 (80 Points)</strong></td>
<td>Wednesday, November 3, 2010</td>
<td>VMS Building, Room 201</td>
<td></td>
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<tr>
<td><strong>Examination 3 (80 Points)</strong></td>
<td>Monday, November 22, 2010</td>
<td>VMS Building, Room 201</td>
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</tr>
<tr>
<td><strong>Examination 4 (80 Points)</strong></td>
<td>University Final Schedule</td>
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</tbody>
</table>

**Course Points (450 Points)**

- Examinations 1, 2, 3 and 4: 320 Points
- Laboratory reports: 130 Points
A student can earn a maximum 130 laboratory points.

**Course Grades**
- Grade A: 405 to 450 Points
- Grade B: 360 to 404 Points
- Grade C: 315 to 359 Points
- Grade D: 270 to 314 Points
- Grade F: 0 to 269 Points

Course grades are based on the grading schema without exception.

**Laboratory Schedule**
- Week 1: 8/31 to 9/2
  - Syllabus, Briefing - Laboratory Biosafety (8/31)
  - Biosafety Quiz, Briefing - Training Week 1 (9/2)
- Week 2: 9/7 to 9/9
  - Briefing - Training Week 2
- Week 3: 9/14 to 9/16
  - Briefing - Training Week 3
- Week 4: 9/21 to 9/23
  - Briefing - Laboratory Reports 1 and 2
- Week 5: 9/28 to 9/30
  - Laboratory Reports 3 and 4
- Week 6: 10/5 to 10/7
  - Laboratory Reports 5 and 6
- Week 7: 10/12 to 10/14
  - Laboratory Reports 7 and 8
- Week 8: 10/19 to 10/21
  - Laboratory Reports 9 and 10
- Week 9: 10/26 to 10/28
  - Laboratory Reports 11 and 12
- Week 10: 11/2 to 11/4
  - Aerobic Gram-positive and Gram-negative Bacteria (1 Report)
  - Laboratory Report for API 20E System
- Week 11: 11/9 to 11/11
  - Aerobic Gram-positive and Gram-negative Bacteria (1 Report)
  - Laboratory Report for Selective and Differential Agar
- Week 12: 11/16 to 11/18
  - Aerobic Gram-positive and Gram-negative Bacteria (1 Report)
  - Laboratory Report for Antimicrobial Susceptibility Testing
  - Laboratory Report for Obligate Anaerobic Bacteria
- Week 13: 11/23
  - Briefing and Demonstration - Enzyme-Linked Immunosorbent Assay (Thanksgiving Break (11/25)
- Week 14: 11/30 to 12/2
  - Discussion - Laboratory Review
VTPP 423, SECTION 501
BIOMEDICAL PHYSIOLOGY I
COURSE INFORMATION
FALL SEMESTER 2010

Discussions: MWF: 9:10 am – 10:00 am (Rm 306, Vet Med Sci Bldg)
Lab Sessions: T: 12:40 - 2:30 pm (Rm 316, Vet Med Sci Bldg)

Instructor: J. F. Hunter
Office: Rm 304C (VMS)
Office Hours: MWF 8:00 am – 9:00 am and 10:00 am – 11:00 am; also by appointment (862-1028)
E-mail: jhunter@cvm.tamu.edu

Teaching Assistant: Alex


Web-sites: http://elearning.tamu.edu/

Course Goal: To understand the physiological significance of cells, organs and organ systems in maintaining homeostasis of the mammalian organism. (To develop critical thinking, problem solving and self-learning skills in preparation for a career in medicine/science.)

Course Grading: A total of 400 points are possible in the course.

Letter grades will be assigned based on total points earned:

A = 360 to 400 points
B = 320 to 359.9 points
C = 280 to 319.9 points
D = 240 to 279.9 points
F = 0 to 239.9 points

A) Major exams: 37.5% of course grade (150 points); 60 minute exams
   Exam A (50 points) - Wednesday, September 22, 6:00 p.m., Rm 201
   Exam B (50 points) - Monday, October 18, 6:00 p.m., Rm 201
   Exam C (50 points) - Monday, November 8, 6:00 p.m., Rm 201

B) Grade contract (see attachment): 12.5% of course grade (50 points)

C) Final exam (comprehensive): 25% of course grade (100 points); 2 hour exam
   Monday, December 13, 8:00 am – 10:00 am, Rm 306/316

D) Laboratory exams and assignments: 25% of course grade (100 points)
VTPP 423 Course Policy Statements

Note - information in quotation marks is extracted from Texas A&M University Student Rules 2010-2011

Examinations:

Major examinations and the final examination will be written to assess a student's understanding of the information contained in the reading assignments or discussed in class with particular emphasis on the specified objectives. All students enrolled in VTPP 423 will take the major examinations at 6:00 p.m. in the room assigned for their section on the following dates: September 22, October 18, and November 8. Laboratory examinations will also be held at 6:00 p.m. on the following dates: October 7 and December 7. The examinations will be multiple choice, standardized exams. ParScore Test Forms will be furnished. Students will need to bring a number 2 pencil to every examination. A non-programmable calculator is required for the lab tests and recommended for the lecture examinations. Seating for examinations is assigned on a random basis; a seating chart will be posted outside the exam room approximately 15 minutes prior to each examination.

Students who have withdrawn from or Q-dropped the course are not considered as officially enrolled in the course and, thus, may not take major, lab or final examinations or attend lectures or participate in labs.

Grade Appeals:

Questions regarding grading of exams, worksheets, quizzes, reports, etc. must be brought to the attention of the instructor within one week following return of these materials. Grades will not be changed following this one week grade appeal period.

Attendance:

Class attendance is expected. Your arrival to the class on time will be appreciated. Should you arrive late, please enter via the door at the back of the classroom and quietly apologize to the students who you may disrupt as you take your seat in the classroom. If the first in-class quiz question has been completed, you will not have the opportunity to answer this question.

“The university views class attendance as an individual student responsibility. Students are expected to attend class and to complete all assignments.”

“If the student is seeking an excused absence, the student must notify the instructor as soon as possible after the absence, but no later than the end of the second working day after the last date of absence.”

Make-up examinations will only be given for excused absences. The format for make-up examinations will not necessarily be the same as for scheduled examinations; the format will be at the instructor's discretion (eg. short answer, essay, oral, etc.).

The instructor will designate the date and time of make-up examinations.
Classroom Communication:

The university has established a formal process for handling student grievances associated with any course. If there are major concerns about the conduct of a course, which cannot be resolved by meeting with the instructor of a course, a Classroom Communication Concerns form should be completed and submitted to the appropriate department head. (This form is available in the VTPP Departmental Office, Rm 332, VMA.)

Scholastic Dishonesty:

“IT is the responsibility of students and instructors to help maintain scholastic integrity at the university by refusing to participate in or tolerate scholastic dishonesty.”

“An Aggie does not lie, cheat, or steal or tolerate those who do.”

All examinations in this course are closed book, closed note, and closed neighbor exams. Video recording devices and other technological means may be used to supplement documentation of acts involving Scholastic Dishonesty. The instructors of this course regard Scholastic Dishonesty as a very serious offense and disciplinary action will be taken. Sanctions will include a grade of zero on the examination and a grade of “F” or “F*” in the course. All violations of the Aggie Honor Code in this course will result in a letter of reprimand being made a part of the student’s records. Upon appeal of an accusation of Scholastic Dishonesty, the Honors Council can institute additional sanctions including separation from the University.

Folks: do not be confused, these instructors do not tolerate cheating. If you engage in an act of scholastic dishonesty, there is a very high probability that you will be caught. The capabilities and talents of the instructors to identify and verify cheating and their commitment to prosecute cheaters should not be underestimated. Almost every semester, one or more students fail to take this warning seriously. Please do not jeopardize your reputation, academic studies or future professional career.

Americans with Disabilities Act:

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring accommodation, please contact the Department of Student Life, Services for Students with Disabilities, in Cain Hall, Rm B118 or call 845-1637. For additional information visit http://disability.tamu.edu
VTPP 423
COURSE SYLLABUS
FALL SEMESTER 2010

DATE ASSIGNMENT - assigned reading in Sherwood text.

OBJECTIVES – to perform well in this course, you will need to understand, apply and, in some instances, quantify the concepts that are presented.

Aug 30 ASSIGNMENT Homeostasis: The Foundation of Physiology; Chapter 1: pages 1-17

Aug 30 OBJECTIVES the logical relationship between the structure and function of cells, tissues and organs, including the concept of differentiation and specialization.

processes important in maintaining homeostasis, including the role of negative feedback.

Sep 1 ASSIGNMENT Fluid and Acid-Base Balance; Chapter 15: pages 558-560 and 563-565

Sep 1 OBJECTIVE the body fluid compartments, principle constituents and regulation of fluid balance.

Sep 3 ASSIGNMENT Cell Physiology; Chapter 2: pages 20-31

Sep 3 OBJECTIVES the overall organization of the cell.

the functional specialization of specific cellular organelles - the endoplasmic reticulum, Golgi complex, lysosomes and peroxisomes.

Sep 6 ASSIGNMENT Cell Physiology; Chapter 2: pages 31-49

Sep 6 OBJECTIVES the processes of glycolysis, the citric-acid cycle and electron-transport chain, and the role of ATP in cell energetics.

the activities carried out within the cytosol.

the various structures making up the cytoskeleton and their proposed functions.

Sep 8 ASSIGNMENT Plasma Membrane and Membrane Potential; Chapter 3: pages 52-69

Sep 8 OBJECTIVES the functional significance of the various components of the plasma membrane.

the role of specialized cell junctions - desmosomes, tight junctions and gap junctions.
the factors influencing simple diffusion and specific examples of diffusion/osmosis.

the limitations in facilitated diffusion and specific examples of this type of mass transport.

Sep 10 ASSIGNMENT Plasma Membrane and Membrane Potential; Chapter 3: pages 69-75

Sep 10 OBJECTIVES membrane active transport; specifically, the involvement of carrier proteins and ATP in this process.

secondary active transport of glucose and amino acids in the kidneys and small intestines.

vesicular transport.

Sep 13 ASSIGNMENT Plasma Membrane and Membrane Potential; Chapter 3: pages 75-82

Sep 13 OBJECTIVES the magnitude, polarity and significance of resting membrane potentials.

the various factors contributing to the establishment of membrane potentials.

Sep 15 ASSIGNMENT Principles of Neural and Hormonal Communication: Chapter 4: pages 86-94

Sep 15 OBJECTIVES the difference between graded and action potentials.

the various phases of an action potential and their relation to changes in membrane permeability and ion fluxes.

Sep 17 ASSIGNMENT Principles of Neural and Hormonal Communication: Chapter 4: pages 94-106

the propagation of action potentials by local current flow and saltatory conduction.

the all-or-none law and the concept of refractory period in excitable cells.

the anatomical structure of synapses and the physiological processes involved in synaptic transmission.

Sep 20 ASSIGNMENT Principles of Neural and Hormonal Communication: Chapter 4: pages 106-129
Appendix V. Syllabi for Core Upper Division Courses

Sep 20 OBJECTIVES  the mechanisms of neuronal signal processing, namely EPSPs, IPSPs, spatial summation, temporal summation and neuromodulation.

cell signaling - how interactions between chemical messengers and membrane receptors can alter cellular activities.
the mechanisms of hormonal communications.

Sep 22 ASSIGNMENT  The Central Nervous System; Chapter 5: pages 132-153

Sep 22 OBJECTIVES  the general organization of the nervous system.

the roles of the neuroglia, meninges, cerebral spinal fluid and the blood brain barrier in the protection and/or nourishment of the brain.

the function of selected areas of the cerebral cortex.

Sep 22 EXAM A (Objectives from Aug 30 – Sep 20) – 6:00 p.m.

Sep 24 Review Exam A (attendance optional)

Sep 27 ASSIGNMENT  The Central Nervous System; Chapter 5: pages 153-167

Sep 27 OBJECTIVES  the functions of subcortical structures.

learning and memory.

the various functions of the cerebellum.

Sep 29 ASSIGNMENT  The Central Nervous System; Chapter 5: pages 167-179

Sep 29 OBJECTIVES  the functions of the brain stem and sleep.

the anatomical organization of the spinal cord and simple spinal cord reflexes.

Oct 1 ASSIGNMENT  The Peripheral Nervous System: Afferent Division; Special Senses; Chapter 6: pages 182-194

Oct 1 OBJECTIVES  the process of transduction, the law of specific nerve energies and the labeled line principle.

the responses of tonic and phasic receptors.

the process of pain transduction and transmission of information and pain perception in higher centers.

the body’s natural analgesic system.
Oct 4 ASSIGNMENT  The Peripheral Nervous System: Afferent Division; Special Senses; Chapter 6: pages 195-201

Oct 4 OBJECTIVES  principles of optics, the anatomy of the eye and formation and movement of ocular fluids.

the control of pupil diameter, near and far vision and the mechanism of accommodation.

Oct 6 ASSIGNMENT  The Peripheral Nervous System: Afferent Division; Special Senses; Chapter 6: pages 201-213

Oct 6 OBJECTIVES  the mechanism for retinal transduction and adaptation of photoreceptors.

signal processing within the eye, neural connections to the CNS and the pupillary light reflex.

Oct 8 ASSIGNMENT  The Peripheral Nervous System: Afferent Division; Special Senses; Chapter 6: pages 213-227

Oct 8 OBJECTIVES  the anatomy of the ear and acoustic principles.

the process of sound transduction, auditory pathways and deafness.

vestibular transduction and the maintenance of balance/equilibrium: roles of the semi-circular canals, utricle and saccule.

Oct 11 ASSIGNMENT  The Peripheral Nervous System: Efferent Division; Chapter 7: pages 236-240

Oct 11 OBJECTIVE  the functional anatomy of the autonomic nervous system.

Oct 13 ASSIGNMENT  The Peripheral Nervous System: Efferent Division; Chapter 7: pages 240-243

Oct 13 OBJECTIVES  the physiological effects of enhanced parasympathetic tone.

the physiological effects of enhanced sympathetic tone.

Oct 15 ASSIGNMENT  The Peripheral Nervous System: Efferent Division; Chapter 7: pages 243-245

Oct 15 OBJECTIVES  autonomic transmitter substances and the classification of autonomic receptors.

the functions of autonomic control centers.
Oct 18 ASSIGNMENT  The Peripheral Nervous System: Efferent Division; Chapter 7: pages 246-253

Oct 18 OBJECTIVE  the synapse and the neuromuscular junction.

Oct 18 EXAM  B (Objectives from Sep 22 – Oct 15) – 6:00 p.m.

Oct 20 Review Exam B (attendance optional)

Oct 22 ASSIGNMENT  Muscle Physiology; Chapter 8: pages 256-264

Oct 22 OBJECTIVES  the characteristics of skeletal, cardiac and smooth muscle.

Oct 22 OBJECTIVES  the microscopic structure of skeletal muscle.

Oct 22 OBJECTIVES  the sliding-filament mechanism of muscle contraction.

Oct 25 ASSIGNMENT  Muscle Physiology; Chapter 8: pages 264-276

Oct 25 OBJECTIVES  the process of excitation-contraction and relaxation.

Oct 25 OBJECTIVES  the influences of recruitment, frequency of stimulation and muscle length on muscle tension.

Oct 25 OBJECTIVES  isotonic and isometric contractions.

Oct 27 ASSIGNMENT  Muscle Physiology; Chapter 8: pages 276-281

Oct 27 OBJECTIVES  the metabolism of skeletal muscle and the process of fatigue.

Oct 27 OBJECTIVES  the three major types of muscle fibers.

Oct 27 OBJECTIVES  hypertrophy and atrophy of skeletal muscle fibers.

Oct 29 ASSIGNMENT  Muscle Physiology; Chapter 8: pages 281-299

Oct 29 OBJECTIVES  control of motor movement - input to motor neurons, muscle spindles, Golgi tendon organs.

Oct 29 OBJECTIVES  the contraction mechanisms of cardiac and smooth muscle as compared to skeletal muscle.

Nov 1 ASSIGNMENT  Cardiac Physiology; Chapter 9: pages 302-316

Nov 1 OBJECTIVES  the physiological significance of the various anatomical parts of the cardiovascular system.

Nov 1 OBJECTIVES  the characteristics of biopotentials in cardiac cells and the conduction of electrical activity through the heart.
Nov 3 ASSIGNMENT   Cardiac Physiology; Chapter 9: pages 316-325
Nov 3 OBJECTIVES  the electrocardiogram.
the cardiac cycle in terms of the electrocardiogram, aortic pressure, left
ventricular pressure, left atrial pressure, left ventricular volume and
heart sounds.

Nov 5 ASSIGNMENT   Cardiac Physiology; Chapter 9: pages 325-338
Nov 5 OBJECTIVES  the determinants and regulation of cardiac output.
the coronary circulation.
the pathogenesis of coronary artery disease.

Nov 8 ASSIGNMENT   The Blood Vessels and Blood Pressure; Chapter 10: pages 342-350
Nov 8 OBJECTIVES  the physics of blood flow; Poiseuille's Law.
the functional significance of arteries.
the measurement and significance of systolic and diastolic blood
pressure.

Nov 8 EXAM C (Objectives from Oct 18 – Nov 5) – 6:00 p.m.

Nov 10 Review Exam C (attendance optional)

Nov 12 ASSIGNMENT   The Blood Vessels and Blood Pressure; Chapter 10: pages 350-368
Nov 12 OBJECTIVES  the regulation of blood flow by arterioles.
the exchange of materials across capillaries.

Nov 15 ASSIGNMENT   The Blood Vessels and Blood Pressure; Chapter 10: pages 368-376
Nov 15 OBJECTIVES  the lymphatic system and the various mechanisms of edema
formation.
the functional significance of veins and factors influencing venous
return, including the effect of gravity on venous pressure.

Nov 17 ASSIGNMENT   The Blood Vessels and Blood Pressure; Chapter 10: pages 376-386
Nov 17 OBJECTIVES  the regulation of mean arterial blood pressure.
the causes of hypertension, hypotension and circulatory shock.
Nov 19 \textbf{ASSIGNMENT} \hspace{1cm} The Respiratory System; Chapter 13: pages 460-485

Nov 19 \textbf{OBJECTIVES} \hspace{1cm} the anatomy of the respiratory system.

\hspace{1.5cm} the mechanics of respiration.

\hspace{1.5cm} various respiratory volumes and assessment of respiratory function.

Nov 22 \textbf{ASSIGNMENT} \hspace{1cm} The Respiratory System; Chapter 13: pages 486-507

Nov 22 \textbf{OBJECTIVES} \hspace{1cm} the exchange and transport of oxygen and carbon dioxide.

\hspace{1.5cm} the factors involved in the control of respiration.

Nov 24 \textbf{ASSIGNMENT} \hspace{1cm} The Urinary System; Chapter 14: pages 510-524

Nov 24 \textbf{OBJECTIVES} \hspace{1cm} the anatomy of the kidney.

\hspace{1.5cm} the functional characteristics of the nephron.

\hspace{1.5cm} the process of glomerular filtration.

Nov 29 \textbf{ASSIGNMENT} \hspace{1cm} The Urinary System; Chapter 14: pages 524-534

Nov 29 \textbf{OBJECTIVE} \hspace{1cm} the mechanisms for tubular reabsorption of sodium ions, glucose, amino acids, phosphate ions, calcium ions, chloride ions, water and urea.

Dec 1 \textbf{ASSIGNMENT} \hspace{1cm} The Urinary System; Chapter 14: pages 534-539

Dec 1 \textbf{OBJECTIVES} \hspace{1cm} the mechanisms for tubular secretion of hydrogen ions, potassium ions and organic ions.

\hspace{1.5cm} the concept and calculation of plasma clearance.

Dec 3 \textbf{ASSIGNMENT} \hspace{1cm} The Urinary System; Chapter 14: pages 539-553

Dec 3 \textbf{OBJECTIVES} \hspace{1cm} how the kidney forms hypotonic, isotonic and hypertonic urine.

\hspace{1.5cm} micturition.

Dec 6 \textbf{REVIEW}
Lab Sessions: Tuesday, 12:40-2:30 pm (Rm 316, Vet Med Sci Bldg)

Instructor: J. F. Hunter
Office: Rm 304C (VMS)
Office Hours: MWF 8:00 am – 9:00 am and 10:00 am – 11:00 am; also by appointment (862-1028)
E-mail: jhunter@cvm.tamu.edu

Lab Staff: Judy Walters (845-5997)


Lab Manual: Available at Media Resources (basement of VMA Building)

Lab Goals: To develop critical thinking, problem solving and scientific skills in preparation for a career in medicine/science. To gain experience in the use of modern physiological data acquisition equipment and the application of computers in the statistical analysis of data. To reinforce physiological principles discussed in lecture sessions.

Lab Grading: A total of 100 points are possible in the laboratory portion of this course.

A) Laboratory worksheets: 50% of lab grade (50 points maximum)

Total points will be determined by averaging the 11 highest worksheet grades and multiplying this average by 0.5. Worksheets are to be submitted prior to the start of lab. Worksheets turned in late will not receive full credit; 25% reduction for each day (or portion of a day) late.

B) Laboratory exams: 50% of lab grade (50 points maximum)

Exam #1 (24 points) - Thursday, Oct 7, 6:00 p.m., Rm 201
Exam #2 (26 points) - Tuesday, Dec 7, 6:00 p.m., Rm 201

Your arrival to lab on time will be appreciated. Lab attendance is required; authorized absences require a written excuse. If you are unable to attend a particular laboratory section (but can attend another lab section), you will be expected to contact the instructor to obtain permission to switch sections.

The VTPP 423 Course Policy Statements (distributed in lecture) also pertain to the laboratory portion of this course.
### LABORATORY SYLLABUS

**FALL SEMESTER 2010**

<table>
<thead>
<tr>
<th>DATE</th>
<th>ASSIGNMENT (Sherwood textbook)</th>
<th>LABORATORY EXERCISE(S)</th>
</tr>
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<tbody>
<tr>
<td>Aug 31</td>
<td>Appendix A &amp; D</td>
<td>Physiological Measurements</td>
</tr>
<tr>
<td>Sep 7</td>
<td>Appendix B (pp. A3-A10)</td>
<td>Osmolarity and Equivalence Determinations</td>
</tr>
<tr>
<td>Sep 14</td>
<td>63-67</td>
<td>Physico-Chemical Phenomena</td>
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<tr>
<td>Sep 21</td>
<td>94-104</td>
<td>Nerve Conduction Velocity and Reaction Times</td>
</tr>
<tr>
<td>Sep 28</td>
<td>227-232</td>
<td>Special Senses</td>
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<tr>
<td>Oct 5</td>
<td>No lab this week (Lab Exam Thursday evening)</td>
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<tr>
<td>Oct 7</td>
<td>Lab Exam #1 at 6:00 p.m., Rm 201 (24 points)</td>
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<tr>
<td>Oct 12</td>
<td>378-380</td>
<td>Autonomic Nervous System</td>
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<td>Oct 19</td>
<td>268-276</td>
<td>Skeletal Muscle</td>
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<td>Oct 26</td>
<td>289-298</td>
<td>Properties of Smooth Muscle</td>
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<td></td>
<td>298-299</td>
<td>Properties of Cardiac Muscle</td>
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<td>Nov 2</td>
<td>316-321</td>
<td>The Electrocardiogram</td>
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<td>Nov 9</td>
<td>321-325</td>
<td>The Relationship Between ECG, Heart Sounds and Pulse</td>
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<tr>
<td>Nov 16479-483</td>
<td>Spirometric Analysis of Respiration</td>
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<tr>
<td>Nov 30511-517</td>
<td>Urine Production</td>
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<tr>
<td>Dec 7</td>
<td>Lab Exam #2 at 6:00 p.m., Rm 201 (26 points)</td>
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</table>

50 points will be based on written lab assignments (laboratory worksheets). Written lab assignments turned in late will have a 25% reduction in grade for every day or portion of a day that the report is late. The eleven highest lab assignment grades will be averaged; i.e. the lowest grade on the lab assignments will be dropped. Lab attendance is required; authorized absences require a written excuse.
1. Round numbers only, only, only in your final answer. Rounding numbers in your calculations may result in errors; such errors will result in a reduction in points. Numbers in spreadsheet programs (e.g. Excel) may appear in a rounded format; do not use rounded numbers, except in your final answer. Round final answers to no fewer than 3 significant figures.

2. Points will only be awarded for correct answers. Points will be rounded to the closest integer.

3. Only the answer indicated in the appropriate blank on the laboratory worksheet will be graded.

4. Multiple choice questions with a single correct answer will be graded either as correct or incorrect (i.e. no partial credit).

5. Multiple choice questions with more than one correct answer will be graded on the basis of the percentage of correct and incorrect answers (e.g. if there are two correct answers and only one correct answer is indicated, only half credit will be given for this answer; if there are two correct answers and one correct answer and one incorrect answer are indicated, no credit will be given).

6. Questions which require laboratory measurements (calibration and data acquisition) will be given full credit if the answer is within 10%; half credit will be awarded for an answer that is in error more than 10%, but within 20%. Answers in error more than 20% will receive no credit (this includes decimal errors).

7. Questions that require interpretation of graphical information will receive full credit if the answer is within 10%; half credit will be awarded for an answer that is in error more than 10%, but within 20%. Answers in error more than 20% will receive no credit (this includes decimal errors).

8. Questions that require calculations based on data provided for that question will be awarded full credit if the answer is within 1%. No partial credit will be given for answers in error more than 1% (this includes decimal errors).

9. Questions which require an answer of either Yes or No will not be considered for partial credit.

10. Fill in the blank questions, questions that require graphing of data, or questions which require a short answer, will receive partial credit at the discretion of the grader/instructor.

11. Failure to indicate units (if units are not indicated following the answer blank) or incorrect units will result in a reduction of one-half the value of the question.

12. Points will be deducted on worksheets that are submitted late (i.e. after 12:40 p.m. on the due date); deductions will be 25 points per day (or fraction thereof) late.

Questions related to the grading of laboratory worksheets need to be brought to the attention of the instructor. Please refer to the grading policy outlined above before making such an appeal. The above grading policy does not apply to laboratory or lecture examinations. Regularly scheduled examinations will be multiple choice and partial credit will not be given.
Welcome from the Dean  
College of Veterinary Medicine & Biomedical Sciences

TO: Class of 2014 Biomedical Sciences Students  
FROM: Dr. Eleanor Green, Dean  
College of Veterinary Medicine & Biomedical Sciences

Howdy! Let me be the first to welcome you to the College of Veterinary Medicine & Biomedical Sciences, and to the special place we call Aggieland. We are so happy that you have chosen to be a part of our undergraduate program in Biomedical Sciences (BIMS). Our BIMS program will challenge you to be the best you can be, and will provide a firm foundation on which to prepare yourself for careers in veterinary medicine, nursing, human medicine, dentistry, or the pharmaceutical industry to name a few. But most importantly, the staff and your fellow students in the BIMS program will become an important part of your success. Aggies have a long tradition of teamwork, and it is a tradition that is alive and well in our college.

Every college student will have a need for experienced assistance, encouragement, and advice during his/her college career. Our Biomedical Sciences advising office is in Room 81 of the Veterinary Medical Administration Building (VTH). Do not feel that you have to wait until you have a concern or problem before visiting with us. We are always happy to see you, and we measure our success by your success. Our advisors have been recognized as leaders at the university level, and have years of experience within the BIMS program. Consider your advisor as more than just someone who helps with your academic progress, we are there to listen and even “just talk.” Each of the advisors is equipped with a list of agency referrals in the event that you have a problem that requires professional assistance, and discussions are always confidential. The Assistant Dean of Biomedical Sciences is Dr. Frank H. “Skip” Landis, and the Director is Dr. Elizabeth Crouch. Senior Academic Advisors Mr. Brady Dennis and Dr. Henry Huebner, and Academic Advisors II Ms. Lydia Carrascosa and Mrs. Suzanne Rosser support them. Our Administrative Assistant is Mrs. Judy Towell. Please stop by to say hello. We may be reached at (979) 845-4941. We look forward to meeting you and hope that you will benefit from your experiences with your advisor.

We are aware that coming to one of the largest universities in the nation, as well as participating in one of the largest undergraduate programs in the state of Texas can be overwhelming, especially with the volume of information you receive when you first arrive. We suggest that as time permits, you look carefully at the Texas A&M University Undergraduate Catalog and the Texas A&M University Student Rules. These materials are important sources of information about university requirements and regulations. Read the materials carefully, and please let us know if you have questions.

Once again, welcome to Texas A&M University, the College of Veterinary Medicine & Biomedical Sciences, and the BIMS program. It is an honor to have you as part of our family. We sincerely hope that you will find personal, intellectual and professional satisfaction from your studies here, and that you will develop life-long relationships with fellow students, faculty and staff that will benefit you in the future.
Biomedical Sciences Degree Plan – Freshman Year

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Credit Hrs</th>
<th>Spring Semester</th>
<th>Credit Hrs</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIMS 101</td>
<td>1</td>
<td>BIOL 112 # Introductory Biology II</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 111 # Introductory Biology I</td>
<td>4</td>
<td>CHEM 102 # Fundamentals of Chemistry II</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 101 # Fundamentals of Chemistry I</td>
<td>3</td>
<td>CHEM 112 # Fundamentals of Chemistry II Lab</td>
<td>1</td>
</tr>
<tr>
<td>CHEM 111 # Fundamentals of Chemistry I Lab</td>
<td>1</td>
<td>MATH 131</td>
<td>3</td>
</tr>
<tr>
<td>HIST 105 History of the U.S. I</td>
<td>3</td>
<td>ENGL 104</td>
<td>3</td>
</tr>
<tr>
<td>Social Science Elective</td>
<td>3</td>
<td>KINE 199</td>
<td>1</td>
</tr>
<tr>
<td>Total Hours</td>
<td>15</td>
<td>Total Hours</td>
<td>15</td>
</tr>
</tbody>
</table>

# Common Body of Knowledge (CBK) Course—see pg. 3

University Policies and Procedures

Core Curriculum
Texas A&M University requires students complete Core Curriculum - a series of course requirements in speech and writing skills, science, mathematics, humanities, visual and performing arts, international and cultural diversity, and social sciences, in addition to the physical education activities and citizenship requirements mandated by the state of Texas.

All degree programs at Texas A&M University have core curriculum requirements integrated within the degree plan; however, specific courses are usually listed rather than optional choices from the approved Core Curriculum list published in the Undergraduate Catalog. **Students must be aware that courses satisfying general Core Curriculum requirements do not necessarily meet specific degree program requirements.** For this reason, **ALL** courses and electives on a student’s degree plan must have the advance approval of his/her academic advisor.

All students must receive credit for, as a minimum, the following courses to meet university Core Curriculum requirements:

- **KINE 199 (physical education)** - 1 credit hour **MUST** be taken S/U (pass/fail)
- **KINE 198 (physical education)** - 1 credit hour **MUST** be a “Health & Fitness” – can be taken S/U (pass/fail) or graded
- **ENGL 104** and one 3 credit hour Communications elective course
- **POLS 206** and **POLS 207** – National and State Government
- **HIST 105** and **HIST 106**
- One 3 credit hour Social Science elective course
- One 3 credit hour Humanities elective course
- One 3 credit hour Visual and Performing Arts elective course
- Two Mathematical/Logical Reasoning courses (6 credit hours total)
- Two Science courses (8 credit hours total)
- International and Cultural Diversity electives (6 credit hours total). **See academic advisor for options.**

Students on military contract who complete four years of military science courses may be required to take only one **HIST** and one **POLS** for some majors. Corps of Cadets members will register for the
military science course according to branch of service. Students in the Fightin’ Texas Aggie Band will also register for KINE 199 (section to be determined by Corps advisor).

**Common Body of Knowledge Coursework (CBK)**
Biomedical Sciences is a competitive program comprised of science-based courses. Many upper level courses require lower level prerequisite courses. A Biomedical Sciences student will be expected to complete courses in sequence as outlined in the course catalog:

Completion of a set of Common Body of Knowledge (CBK) courses (35 credit hours total, including BIOL 111 and 112, CHEM 101, 111, 102, 112, 227, 237, 228, 238, PHYS 201 and 202, and MATH 131, 142, or 151) with a grade of C or better in each course taken at Texas A&M University. If a student chooses to complete a CBK course at an institution other than Texas A&M University, a minimum grade of “B” in the course is required. **CBK courses are the prerequisites for BIMS students to progress to upper level sciences.**

a. Courses are numbered respective to the classification of the intended student. Freshman courses are 100-level, Sophomore courses are 200-level, Junior courses are 300-level, and Senior courses are 400-level. A minimum of 55 completed total credit hours, with a Texas A&M University cumulative GPR of 2.50 or better will be required to remain in the Biomedical Sciences program and to take upper level (300/400) courses.

Each student, upon completion of 55-65 total semester credit hours will be given a degree evaluation to verify progress towards the degree. The student must complete 55 total credit hours and all CBK courses with a grade of “C” or better and a cumulative GPR of 2.50 or better at Texas A&M University, or the student will be removed from the Biomedical Sciences major.

**Transfer Credit**
In order to receive credit for courses completed at other institutions, the student should have an official transcript sent to the Transfer Admissions Processing, P. O. Box 40003, Texas A&M University, College Station, Texas 77842-4003. Transfer credit will be determined by the Office of Transfer Admissions. Application of course credit to specific degree plans will be determined by individual departments.

**Credit by Examination**
Credit by examination is available for some university classes. **Students may not receive credit by examination for courses in which they are enrolled or which they have previously failed.** Students wishing to take departmental exams for course credit should contact Measurement and Research Services, located in the General Services Complex, at (979) 845-0532.

**Scholastic Probation and Suspension**
Scholastic probation will occur if you drop below a cumulative GPR of 2.00 at Texas A&M University in the first 54 hours of the BIMS degree plan. Once you have completed 55 total credit hours, you must maintain a 2.50 at Texas A&M University. Dropping below will result in scholastic probation. Decisions on scholastic probation and suspension are made by the Assistant Dean of Biomedical Sciences.

Many student situations are not typical; therefore the Assistant Dean of Biomedical Sciences considers the varied aspects of each individual case before choosing a course of action. The decisions of the Assistant Dean of Biomedical Sciences may be appealed in writing by following the procedures described in the *Texas A&M University Student Rules*. 
The *Texas A&M University Student Rules* contain definitions and procedural outlines for such matters as scholastic deficiency, scholastic probation, and matters in which these guidelines are based. In any conflict between the individual college guidelines and the *Texas A&M University Student Rules*, the *Rules* have priority.

Scholastic probation is determined at the end of each spring semester. Students placed on scholastic probation MUST take courses at Texas A&M University that summer in order to attempt to raise their overall GPR at Texas A&M University. Students who do not attend Texas A&M University that summer, will be blocked from BIMS and their fall classes will be dropped.

### College of Veterinary Medicine & Biomedical Sciences
**Biomedical Sciences Program Undergraduate Academic Advising**

Room 81, Veterinary Teaching Hospital Building (VTH)
(979) 845-4941

- Dr. Frank H. “Skip” Landis, Assistant Dean
- Dr. Elizabeth Crouch, Director
- Dr. Henry Huebner, Senior Academic Advisor I
- Mr. Brady Dennis, Senior Academic Advisor I
- Ms. Lydia Carrascosa, Academic Advisor II
- Mrs. Suzanne Rosser, Academic Advisor II
- Mrs. Judy Towell, Administrative Assistant

**Advising hours are 8:00am - 12:00pm and 1:00pm - 5:00pm, Monday through Friday, the fall, spring, and summer semesters.** Please call early in the semester to work with an academic advisor. The earlier you start, the better you can plan, and the more time the advisor will have available for you. You may request to see an advisor you prefer or you may take the next available advisor. **Please do not wait until the last minute at preregistration time to seek advising.** As soon as dates for registration of each classification are announced for the next semester, contact the BIMS office and schedule an appointment to discuss registration/schedules. During registration times, advisors are assigned according to classification and special duties such as honors, seniors and athletes.

### Maintaining Good Academic Standing

1. Go to class and talk to your professors.
2. Turn in your assignments on time, every time, and in good condition.
3. Devote time for extra studying beyond the assignment.
4. Work hard and study smart.
5. Get help when you need it.
6. Attend review and Supplemental Instruction (SI) sessions (see pg. 5).
Appendix VI. New Student Conference Handbook

Succeeding in College

**FIRST:** Set goals for yourself. Set short-term and long-term goals. Set academic goals, as well as life goals from your own sense of values.

**SECOND:** Organize your efforts to meet those goals. Make a plan. Manage your time. Work in a series of steps. Set up a schedule by which you can meet specific achievements and objectives toward your goal.

**THIRD:** Discipline yourself. Self-discipline is one of the most significant elements of success in any endeavor. No one else should have to tell you to study; no one else should have to push you to get your work done. The drive must come from you. See to it that you complete the tasks and fulfill the responsibilities necessary to carry out your plans. This is the best way to achieve your goals.

**FOURTH:** Keep records of your academic progress. Get information in writing, and keep everything in an orderly filing system. This includes email correspondence with your professors.

**Supplemental Instruction**

Students may participate in free programs designed to help them with difficult coursework. They may receive such assistance in student-led Supplemental Instruction (SI) review sessions, on-line tutoring, and other help sessions. SI sessions have proven to improve students’ grades in a given course. Contact the Student Learning Center at (979) 845-2724, Room 118 Hotard Hall or go to http://slc.tamu.edu/si.shtml for more information.

**Important Dates/Deadlines**

A semester calendar is provided in your registration packet from the New Student Conference office and is also available online at http://admissions.tamu.edu/Registrar/General/Calendar.aspx. Keep the calendar all semester. It includes information vital to your college success.

**Full-time Status**

Twelve or more total credit hours each semester is considered full-time status. A student who drops below 12 total credit hours in a given semester may:

(a) Become ineligible for certain campus activities (Corps of Cadets, athletics, fraternity or sorority, campus or college organizations).

(b) Become ineligible for certain scholarships, financial aid, loans, campus housing, be dropped from your family insurance, and/or Social Security or Veteran’s benefits.

(c) Fall behind the pace required to graduate in four years.

BIMS students who are on scholastic probation may not drop courses. These students should meet with an academic advisor before considering a Q-drop to discuss the outcome of such actions.
Appendix VI. New Student Conference Handbook

**Q-drop Policy**
Following the add/drop period each semester, a student may Q-drop a course through the 50th class day of a fall or spring semester, the 15th class day of a summer term, or the 35th class day of a 10-week summer term with approval of the department. The course will appear on the student’s record with the designation “Q” and does not affect the student’s GPR. Students will be permitted three (3) Q-drops during their undergraduate studies. Monetary refunds will not be made during the Q-drop period. **After the Q-drop period, individual courses may not be dropped** – the class must be completed or you must withdraw from the university and from all classes with the Assistant Dean’s approval. If a student fails to drop a course(s) in the appropriate manner, the student will earn a grade of “F” in the course(s). Kinesiology (KINE) courses may ONLY be dropped if the student has previously taken a KINE class that meets the Core Curriculum requirement. BIMS students are not allowed to Q-drop courses in which they are making a C or better.

**Withdrawal**
If it becomes necessary for you to withdraw from Texas A&M University, “the Registrar will assign a grade of “W” to all courses enrolled during that semester, any courses previously graded for that semester will be changed to “W”, and the “W” grades will be displayed on the permanent record.” **Note the last date to withdraw from the Texas A&M University is the same date as the Q-drop deadline.** No student will be allowed to withdraw from the Texas A&M University after final exams begin.

To withdraw from Texas A&M University, you must obtain the appropriate form and signature from the BIMS office. No other office, department, or professor can withdraw you. **Students are responsible for withdrawing from Texas A&M University, in person, at the BIMS office.** Should mitigating circumstances arise and the student is unable to withdraw in person, Department of Student Affairs should be contacted at (979) 845-4728 for the correct steps.

**First Year Grade Exclusion**
After finals are complete and grades are posted, a student may exclude up to three “D”, “F”, or “U” grades. The grades must be from Texas A&M University and within the student’s first 12 months. The excluded grades will stay on the student’s transcript, but will not be calculated in the student overall GPR at Texas A&M University. It is important to note that professional schools may still include the excluded grades in their GPR calculations. Grade exclusions must be done with a BIMS academic advisor.

-See Texas A&M University Student Rules 10.10.1 for more information

**Closet Major Status**
If a student enrolls in courses outside of the approved BIMS degree plan they will be considered a closet major. BIMS student are required to take a minimum of two sciences courses, a science and a math course, or a science and an approved BIMS Directed Elective each semester. Students should consult their academic advisor each semester to select courses so as to avoid closet major status.

University Rules and Regulations state:

1.5 Curriculum Violation: Degree-Seeking Graduate and Undergraduate Students

1.5.1 A student is expected to register for a schedule of courses that follows the program of study for a degree in his or her college. A student who elects not to follow the program of study must obtain approval from his or her academic advisor, department head or college Dean or designee, and the Dean or designee of the college offering the courses. A student who fails to obtain approval may be, by his or her Dean or designee, blocked
from registration, removed from the inappropriate course(s) and/or required to register for a prescribed schedule of courses.

**Minors**

A minor is a concentration of courses that focus on a single area of study or an interdisciplinary perspective as developed by the department or program that offers the minor. The department or program offering the minor is responsible for setting enrollment limits and deciding which courses are used to meet the minor. A student interested in adding a minor must talk with that specific department to add the minor to their degree plan. Minors must be declared before the student has completed 75 total credit hours.

**Distinguished Students**

An undergraduate student who completes a semester schedule of at least 15 graded hours or a summer session schedule of at least 12 graded hours with no grade lower than a “C” and with an overall GPR of at least 3.50 shall be designated “Distinguished Student”. An undergraduate student who, under the same circumstances, achieves an overall GPR of at least 3.75 shall be designated a member of the “Dean’s Honor Roll”. Hours earned on a satisfactory/unsatisfactory basis shall not be included in minimum hours for “Distinguished Student” or “Dean’s Honor Roll.” A grade of “I” disqualifies a student from consideration. Only courses toward the specified degree will be used in either honors calculation. Official notification of the designations shall be issued to the student by the Assistant Dean of Biomedical Sciences.

**Spanish Certification**

The interdisciplinary Spanish Certification program offers Biomedical Sciences students an exciting opportunity to prepare for global careers in health and life sciences. The program provides students a solid foundation in Spanish, an important language for BIMS professionals. Students acquire linguistic skills for communicating in Spanish and participate in an innovative capstone Spanish experience designed specifically for BIMS. The program also includes cultural studies that focus on international matters and deals with topics of contemporary relevance. Most importantly, the program offers students opportunities for international internships in Spanish-speaking countries and study abroad experience. Students interested in this program, and who do not already have college Spanish credit, should take the Spanish placement test to determine their language level in order to begin coursework. The exam is taken through Measurement and Research Services (979) 845-0532. Students should also see a BIMS academic advisor for information on specific requirements. The student must enroll in the program before completion of 75 total credit hours.

**University Statement on Harassment and Discrimination**

“Texas A&M is committed to the fundamental principles of academic freedom, equality of opportunity and human dignity. To fulfill its multiple missions as an institution of higher learning, Texas A&M encourages a climate that values and nurtures collegiality, diversity, pluralism and the uniqueness of the individual within our state, nation and world. All decisions and actions involving students and employees should be based on applicable law and individual merit.
Texas A&M University, in accordance with applicable federal and state law, prohibits discrimination, including harassment, on the basis of race, color, national or ethnic origin, religion, sex, disability, age, sexual orientation, or veteran status.” (http://student-rules.tamu.edu/statement)

Individuals who believe they have experienced harassment or discrimination prohibited by this statement are encouraged to contact the appropriate offices within their respective units.

Students should contact the Office of the Dean of Student Life at 845-3111.

**Aggie Honor Code**

The Aggie Code of Honor is an effort to unify the aims of all Texas A&M University men and women toward a high code of ethics and personal dignity. For most, living under this code will be no problem, as it asks nothing of a person that is beyond reason. It only calls for honesty and integrity, characteristics that Aggies have always exemplified. The Aggie Code of Honor functions as a symbol to all Aggies, promoting understanding and loyalty to truth and confidence in each other. (http://compliance.tamu.edu/CodeConduct.aspx)

"An Aggie does not lie, cheat, or steal or tolerate those who do"

**Student Organizations**

**Biomedical Sciences Association (BSA)**

The objectives of BSA are (1) to promote and advance public awareness of the capabilities of the life science graduate, (2) to develop a close association of interested students through group activities, and (3) to enhance the image of life science students on the campus of Texas A&M University.

All students enrolled in a life science curriculum are eligible for membership. Dues are $40.00 per year and include a t-shirt.

*For more information, see the BSA website: [www.cvm.tamu.edu/bsa](http://www.cvm.tamu.edu/bsa) and the handout in your New Student Conference folder.*
### Sources of Assistance

<table>
<thead>
<tr>
<th>TOPIC</th>
<th>SOURCE</th>
<th>LOCATION</th>
<th>PHONE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic Counseling</td>
<td>BIMS Academic Advisor</td>
<td>81 VTH Building</td>
<td>(979) 845-4941</td>
</tr>
<tr>
<td>Appeal a Grade</td>
<td>Instructor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Career Counseling</td>
<td>Marilyn Smith Yeager</td>
<td>209 Koldus</td>
<td>(979) 845-5139</td>
</tr>
</tbody>
</table>
| Change Major           | 1<sup>st</sup> – Academic Advisor for Intended Major  
                        | 2<sup>nd</sup> - Dean of College for Intended Major |    |                |
| Drop a course          | BIMS Academic Advisor         | 81 VTH Building| (979) 845-4941 |
| Grades                 | Instructor                    |                |                |
|                        | Howdy Portal                  |                |                |
| Grade Exclusion        | BIMS Academic Advisor         | 81 VTH Building| (979) 845-4941 |
| (FYGE)                 |                               |                |                |
| Course selection,      | BIMS Academic Advisor         | 81 VTH Building| (979) 845-4941 |
| schedule, changes,     | Howdy Portal                  |                |                |
|                        |                               |                |                |
| Graduation Requirements| BIMS Academic Advisor         | 81 VTH Building| (979) 845-4941 |
|                        | Undergraduate Catalog         |                |                |
| Report Absence         | 1<sup>st</sup> – Instructor  
                        | 2<sup>nd</sup> - BIMS Office | 81 VTH Building| (979) 845-4941 |
| Study Skills           | Student Learning Center       | 118 Hotard Hall| (979) 845-2724 |
|                        | Student Counseling Center     | Cain Hall      | (979) 845-4427 |
| Withdrawals            | BIMS Academic Advisor         | 81 VTH Building| (979) 845-4941 |
## Fall 2010 Semester Schedule

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>August 27</td>
<td>Friday. 5pm. Last day to register for fall semester classes and pay fees.</td>
</tr>
<tr>
<td>August 29</td>
<td>Sunday. 2:30pm. Freshman Convocation.</td>
</tr>
<tr>
<td>August 30</td>
<td>Monday. First day of fall semester classes.</td>
</tr>
<tr>
<td>September 3</td>
<td>Friday. 5pm. Last day for adding/dropping courses for fall semester.</td>
</tr>
<tr>
<td>September 10</td>
<td>Friday. 5pm. Last day to apply for all degrees to be awarded in December.</td>
</tr>
<tr>
<td></td>
<td>• 5pm. Last day to apply for all degrees to be awarded in December.</td>
</tr>
<tr>
<td></td>
<td>• Academic Convocation.</td>
</tr>
<tr>
<td>November 5</td>
<td>Friday. Last day for all students to drop courses with no penalty (Q-drop)</td>
</tr>
<tr>
<td></td>
<td>• Last day to change KINE 198/199 grade type.</td>
</tr>
<tr>
<td></td>
<td>• Last day to officially withdraw from the University.</td>
</tr>
<tr>
<td>November 18-December 3</td>
<td>Thursday-Friday. Pre-registration for 2011 spring semester.</td>
</tr>
<tr>
<td>November 25-26</td>
<td>Thursday-Friday. Thanksgiving Holiday.</td>
</tr>
<tr>
<td>December 6</td>
<td>Monday.</td>
</tr>
<tr>
<td></td>
<td>• Redefined day, students attend their Friday classes.</td>
</tr>
<tr>
<td></td>
<td>• Prep day, classes meet, but no regular exams (except laboratory and one-hour classes) shall be given on these days.</td>
</tr>
<tr>
<td>December 7</td>
<td>Tuesday.</td>
</tr>
<tr>
<td></td>
<td>• Last day of fall semester classes.</td>
</tr>
<tr>
<td></td>
<td>• Redefined day, students attend their Thursday classes.</td>
</tr>
<tr>
<td></td>
<td>• Prep day, classes meet, but no regular exams (except laboratory and one-hour classes) shall be given on these days.</td>
</tr>
<tr>
<td>December 8-9</td>
<td>Wednesday-Thursday. Reading days, no classes.</td>
</tr>
<tr>
<td>December 10, 13-15</td>
<td>Friday, Monday-Wednesday. Fall semester final exams for all students.</td>
</tr>
<tr>
<td>December 17</td>
<td>Friday. 5pm. Last day for December undergraduate degree candidates to apply for Tuition Rebate</td>
</tr>
<tr>
<td>December 17-18</td>
<td>Friday-Saturday. Commencement and Commissioning.</td>
</tr>
<tr>
<td>December 20</td>
<td>Monday @ Noon. Final grades for all students due in Office of the Registrar</td>
</tr>
<tr>
<td>December 24-31</td>
<td>Friday-Friday. Faculty and Staff holiday.</td>
</tr>
</tbody>
</table>

All dates and times are subject to change
Academic Advising Syllabus
Biomedical Sciences
Texas A&M University

Advising Office: College of Veterinary Medicine & Biomedical Sciences
Room 81, VMA Bldg.
College Station, TX  77843-4465
Phone:  979-845-4941
Email:  bims@cvm.tamu.edu

Office Hours:  8-12 noon and 1-5 p.m. – Monday – Friday (Closed from 12-1 p.m. for lunch)

Resources:
- Biomedical Sciences:  http://www.cvm.tamu.edu/bims/
- Undergraduate Catalog:  http://www.tamu.edu/admissions/catalogs
- Student Rules:  http://student-rules.tamu.edu
- Office of and Professional Graduate School Advising:  http://honors.tamu.edu/opsa/
- Career Center:  http://careercenter.tamu.edu/
- Registrar’s Home Page  http://admissions.tamu.edu/registrar/

Academic Advising:
Undergraduate advising in the Biomedical Sciences Program provides you the opportunity to build a relationship with your advisor for the purpose of gaining assistance in planning your educational career, learning the skills needed for academic success, and making you aware of the resources and services available to you at Texas A&M University.

In order to ensure your academic and career goals are a success you must have a participatory partnership between you and your advisor.  This relationship will be built over your entire educational experience, and both you and your advisor have clear responsibilities for ensuring the advising partnership is a success.

What You Can Expect From Your Advisor:
- Understand and effectively communicate curriculum, graduation requirements, and academic policies and procedures.
- Encourage and guide you to define and develop clear and realistic educational plans.
- Assist you in gaining decision making skills and assuming increasing responsibility for your educational plans and achievements.
- Be accessible for meetings with you during office hours, by appointment, telephone, or email.
- Maintain your privacy according to FERPA and university policy by limiting information given out over the phone and using only your official TAMU email address.
- Work with you to assess your academic performance and areas of strength to ensure they are consistent with your plans.
- Refer you to other campus offices and resources as needed.

What Your Advisor Expects From You:
- Schedule and attend advising appointments at least once per semester.
- Be involved in the advising process by being prepared to discuss your goals and educational plans during meetings.
- Create an advising folder to organize your advising-related materials, keep it updated, and bring it with you to your appointment.
- Ask questions if you do not understand an issue or have a specific concern.
Take primary responsibility for your educational plans and goals by reviewing your degree plan and graduation requirements and track your progress toward completing these requirements each semester. Bring any discrepancies to our attention.

Complete all assignments or recommendations from your advisor.

Keep your address and phone information current in Howdy.

Read your official TAMU email regularly. This is how the university and our office will communicate with you.

Refrain from asking for academic advice from friends, classmates, or parents.

Accept responsibility for your decisions and your actions (or inactions) that affect your educational progress and goals.

**Scheduling an Appointment:**
Appointments are your primary means for meeting with your academic advisor. Appointments are scheduled for 30 minutes.

*Appointment Etiquette:*

- Make an appointment in one of the following ways:
  - Call Judy in the advising office at (979) 845-4941.
  - Come to the BIMS office and schedule an appointment.
- If you are unable to keep your appointment, please call (979) 845-4941 to cancel or reschedule as early as possible.
- Prepare for the meeting.
  - If you are seeking assistance with your schedule or long-term planning, bring a draft schedule or list of classes you are considering.
  - Write down questions/issues you need to discuss.
- Silence your cell phone and disable your text notification prior to your advising appointment.
- Arrive on time.
  - If you arrive more than 10 minutes late for the appointment, be prepared to reschedule.

**Hints That Will Aid Your Academic Success:**

- Get to know your professors by going to their office hours.
- Go to class!
- Seek academic/study help sooner rather than later.

Ultimately, the college experience you build is YOUR responsibility!
Advising/Educational Outcomes for Students:

**Personal Growth:** Develop communication, decision-making, and problem-solving skills

- Define your short-term and long-term goals and be able to articulate them during your advising sessions.
- Use your interests, strengths, and challenges to describe the connection between your goals and your values.
- Use time management effectively to understand the balance between academics, family, friends, work, recreation, and social activities.
- Make adequate use of advising and other sources of information to effect changes in your life in support of your goals.
- Use university resources effectively to assess your progress toward graduation (e.g., degree evaluation, faculty/staff/mentor information).

**Curriculum/Experiential Learning:** Understand the relationship and importance between your classroom and outside experiences in your academic, career and personal goals

- Demonstrate how your major curriculum helps you achieve your goals.
- Show an understanding of the fundamental sciences by successfully completing all CBK courses prior to taking upper level sciences.
- Demonstrate a comprehensive knowledge underlying concepts of health and disease.
- Devise a four-year plan of courses to allow you to graduate in a timely manner.
- Participate in undergraduate research in order to:
  - Demonstrate the ability to work safely and effectively in a lab.
  - Dissect a problem into its key features and to test hypotheses through interpretation of experimental data.
- Demonstrate your ability to use oral, written, and visual presentations to communicate your scholarly work.
- Gain a working knowledge of the process of scientific discovery.
- Engage in a multi-cultural experience such as Studies Abroad and completing the Spanish Certificate.
# General Academic Advising Timeline

Your advisor is here to help you along the way

| 1st Year: | - At New Student Conference make sure you understand the curriculum  
- Learn to utilize time management skills  
- Get involved (BSA and other campus organizations)  
- Contact a BIMS Academic Advisor  
- Begin building a resume |
| 2nd Year: | - Continue conversation with BIMS Academic Advisor  
- Begin exploring research opportunities available on campus, if desired  
- Explore connections between your interests, strengths and potential careers  
- Stay involved, choose activities that suit your interests |
| 3rd Year: | - Get involved in research and/or internships, study abroad and volunteering  
- Update your resume  
- Meet with an OPGSA Advisor (Office of Professional & Graduate School Advising)  
- Research career options, graduate programs and professional schools  
- Talk to BIMS academic advisors or faculty in your area of interest  
- Take graduate and/or professional school entrance exams (GRE, MCAT, DAT, PCAT, etc.) |
| 4th Year: | - Finalize career/post-graduate plans  
- Apply for graduate and/or professional school  
- Submit resumes/begin interviewing  
- Complete final degree evaluation with BIMS Academic Advisor prior to registration period of final semester  
- Apply for graduation during final semester of classes |
Your academic advisor will assist you by providing information and resources, but you are responsible for planning ahead and meeting academic requirements and deadlines for graduation requirements.

By signing this form you agree that you have read and understand the Advising Syllabus and the expectation from both parties in your educational experience.

__________________________  ________________________
Student Name (Printed)            UIN

__________________________  ________________________
Student Signature             Date
BIMS International Certificate in Cultural Competency and Communication in Spanish

One of the goals of Vision 2020 is to “diversify and globalize the A&M community.” Two key indicators in Texas A&M’s (TAMU) Quality Enhancement Plan are specific to creating excellence in diversity for student learning and in internationalization. These two goals are stated as follows:

- Students graduating from Texas A&M University should be able to function successfully in complex, diverse, social, economic, and political contexts.
- Students graduating from Texas A&M University will be able to function effectively in their chosen career fields in an international setting.

Specifically, students who complete the BIMS international certificate will:

1. **be functionally bilingual** and employ attained language skills in both social and formal settings,
2. **be able to perform linguistically and in a culturally sensitive manner within the medical and/or agricultural environment,**
3. **gain experiential knowledge abroad, expanding their cultural sensitivities and functionality in a foreign environment.** Students should be able to compare and contrast Latin American and Spanish cultural ideas with those of the Anglo population within the United States. Students should recognize cultural differences, using language and social skills to interact effectively within a foreign environment.

The certificate has been generated with the student’s required TAMU core curriculum in mind. Many students may wish to discuss a minor in language, political science, sociology, etc. based upon the courses taken to satisfy the certificate requirements. To discuss a minor, please speak with your academic advisor, as well as the college/department in which you wish to minor.

**Requirements:**

**Spanish Credit:**

Students will be required to have a minimum of 9 hours of Spanish credit to include:

- SPAN 201**
- SPAN 202
- **SPAN 300/400 level course of your choice #**

**Spanish 101 and 102 credits may be gained from a departmental exam or AP credit. Spanish 221 and 222 are acceptable substitutions, when taken abroad, for 201 and 202.**

# See your academic advisor for courses that are acceptable choices.

**Courses in Cultural Competency:**

Students must choose one course for a total of 3 hours of credit. Students should check with their individual catalogs to determine if a course has prerequisites and is included in the TAMU core curriculum as a humanities, visual and performing arts, social science or international cultural diversity elective. Students should check with their advisor as to applicability of the cultural competency course to their degree plan.
For catalog 131 and forward:
I=International and Cultural Diversity Credit
B=BIMS Directed Elective
S=Social Science
H=Humanities
(If you are in an earlier catalog, please check with your academic advisor as to the category of the elective you choose.)

COMM 335 Intercultural Communication; I, S
GEOG 323 Geography of Latin America; I, H
HIST 307 Latino Communities of the USA; I, H
HLTH 236 Race, Ethnicity and Health; I, S
POLS 323 Political Systems of Latin America; I, S
SOCI 317 Racial and Ethnic Relations/Minority Groups; I, S
SOCI 330 Sociology of Nutrition; I, S
SOCI 403 Sociology of Mexican Americans; I, S
VIBS 432 Public Health Practices; B
VTPB 221 Great Diseases of the World; I, S

Anchoring Courses:
Students are required to complete a 5 hour experience, the goals of which are the following:

   a) To gain functionality in biomedical terminology in Spanish
   b) To gain confidence in cross-cultural communication skills
   c) To gain confidence in biomedical communication skills

It is suggested that students participate in this experience after completing at least through Spanish 201 (or equivalent). Please see your academic advisor to learn about the details and course(s).

International Experience

Students are required to complete a minimum 9 consecutive days abroad in a Spanish-speaking country (i.e. Spanish is the primary language).* Students who are natives of, or have first-degree relatives in a Spanish-speaking country are highly encourage to study in a new/different location from that which they are accustomed.

* Your academic advisor will have suggestions for finding a suitable international experience. Please also see your advisor for acceptable alternatives in work experiences within areas such as the Colonias of South Texas. Credit may be requested per departmental/degree plan rules. Please see your academic advisor.

Stipulations:

All coursework for the certificate must be completed with a “C” or better. Students must sign up for the certificate prior to receiving 75 hours of credit passed (includes all credit passed, regardless of where taken or applicability to degree plan). Students will receive the certificate and have the denotation added to their transcript upon graduation with a degree in Biomedical Sciences.
Appendix IX. BIMS 485 Syllabus

Instructor: Dr. Henry Huebner  
Course: BIMS 484
Office: Room 81-VTH/BIMS office  
Office Hours: By appt. through BIMS*  
*When calling for an appointment, please let Judy know that you are in my BIMS 484 course and are requesting a meeting to ask questions.

General Description: This course provides opportunities for learning and training experiences in the Biomedical Science industry which are appropriate to the student’s career goals; professional supervision required. Payment for the training/field experience is optional. The following are typical examples of jobs for which credit may be granted: Shadowing a health professional (this should involve some contact with patients in a clinical setting); Working as a health professional (employment as an EMT technician or Veterinary technician); Working in biomedical research (employment in a research laboratory). The student will receive 2 hours of BIMS directed elective credit upon completion of the course requirements (S/U grade). If the student is obtaining 485 credit for the field experience, then 484 credit will not be granted.

Prerequisites: Junior/Senior classification; approval of instructor; BIMS major with a minimum overall 2.5 TAMU GPA; All CBKs completed for BIMS majors.

Grade: Your final grade will consist of the following assignments:

1. **Sixty (60) documented hours of work experiences.** Dr. Huebner must approve the work before enrolling in the course. The attached form can be used to document the hours. (36 points)

2. **Field experience completion letter.** The student’s supervisor must provide a letter certifying that the student has satisfactorily completed all the requirements of the field experience. The completion letter should be addressed to Dr. Huebner and must be on letterhead stationary and signed by the student’s supervisor. Comments by the supervisor are welcome, but not required. (32 points)

3. **Final written report.** The student must provide a brief overview of their BIMS 484 activities and summarize their overall experiences and impressions. Areas for discussion may include ascertained strengths, weaknesses, ethical struggles and any unique or unusual experiences. This report should be approximately one page in length (12 pt font, 1.5 line spacing, 1” top/bottom margins, 1.25” left/right margins). (32 points)

Grade scale: 90-100=A  
80-89.9=B  
70-79.9=C  
60-69.9=D  
Less than 60=F  
Satisfactory grade = 70-100  
Unsatisfactory grade 0-69.9
Due Dates:

All assignments (documentation of work hours, completion letter and final report) are due by 4 pm on Tuesday May 3, 2011. All work not turned in by this date and time will receive a grade of zero for that assignment and a final grade for the course (U) will be assigned accordingly.

Policies:

1. A university-excused absence is the only excuse acceptable for missing an assignment. For information regarding what constitutes an excused absence, please see http://student-rules.tamu.edu/rule7.htm. A link for the Explanatory Statement for Absence form (for absences less than three days) is on this webpage as well. Any university-excused assignment not completed WILL result in a grade of I (incomplete). The requirements needed to complete the course must be completed before the last day of classes during the next semester in which the student is registered. Otherwise, the grade will become a U.

2. Late work is unacceptable, unless the student has a university-excused absence.

3. Academic Integrity Statements

   **AGGIE HONOR CODE**

   "An Aggie does not lie, cheat, or steal or tolerate those who do."

   Upon accepting admission to Texas A&M University, a student immediately assumes a commitment to uphold the Honor Code, to accept responsibility for learning, and to follow the philosophy and rules of the Honor System. Students will be required to state their commitment on examinations, research papers, and other academic work. Ignorance of the rules does not exclude any member of the TAMU community from the requirements or the processes of the Honor System.

   For additional information please visit: http://www.tamu.edu/aggiehonor/

   **Scholastic dishonesty will not be tolerated!** Any dishonesty or deception will result in a zero for the assignment and a letter of reprimand. In addition, it is the university’s right to seek conduct probation, suspension, or dismissal from the university, as provided for in the Aggie Honor Code.

   The Aggie Honor Code, definitions of academic dishonesty, and procedures for handling dishonesty cases may be found at http://www.tamu.edu/aggiehonor/. **I recommend all students read this!**

4. Texas A&M has very clear policies regarding discrimination (The American with Disabilities Act is a federal act which all states and state institutions must comply with.) and sexual harassment. Should you feel that you have a disability that requires accommodations to ensure a proper learning environment, you may contact the Office of Services for Students with Disabilities in the Department of Student Life Services. The American with Disabilities Act is as follows:
Americans with Disabilities Act (ADA) Policy Statement

The following ADA Policy Statement (part of the Policy on Individual Disabling Conditions) was submitted to the University Curriculum Committee by the Department of Student Life. The policy statement was forwarded to the Faculty Senate for information.

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact the Department of Student Life, Services for Students with Disabilities, in Cain Hall or call 845-1637.

5. There are formal processes for dealing with grievances concerning grades, scholastic dishonesty, failure to provide adequate learning environments, sexual harassment and discrimination. If there are major concerns about the conduct of this course (and an agreeable resolution can not be met between us), you may contact Dr. “Skip” Landis, Rm 81 VMTH. Alternatively, for disability and sexual harassment grievances, you may contact the Department of Student Life Services. For discrimination grievances, you may contact the Vice President of Student Affairs. For formal processes regarding scholastic dishonesty, please see the Honor Code website and the Student Rules and Regulations.

6. The aforementioned policies are in compliance with and derived from the TAMU Rules and Regulatory Compliance statements found in the policies and rules section of the TAMU website, as well as the website for the Aggie Honor System Office and the Dean of Faculties and Associate Provost Office.
Appendix IX. BIMS 485 Syllabus

________________________shadowed/worked in__________________________

Name of Participant     Name of Clinic

for _________ hours total.

<table>
<thead>
<tr>
<th>DATE</th>
<th>HOURS</th>
<th>SIGNATURE OF SUPERVISOR</th>
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Appendix X. Senior Survey for Program Assessment for Given to December 2010 Students

POST GRADUATE INFORMATION
Biomedical Sciences December 2010 Graduates

The following information is requested to track, evaluate, and expand opportunities for BIMS graduates.

Name: _________________________________  UIN: ________________

Permanent Mailing Address, City, State, Zip and Phone Number:
___________________________________________________________________

PLANS FOLLOWING GRADUATION (choose I, II, or III)

I. Employer Name: __________________________ Job Title: __________________

Beginning Salary: _____________________________

Would you like your information added to a mailing list of potential employers? (yes) (no)

II. Professional and/or Allied Health programs applied to and/or accepted to:

Medical (MD): ____  Accepted (yes/no): ______________
Dental (DDS): ____  School Name: _______________________
Veterinary (DVM): ____  Start Date: _________________
Pharmacy (RPH): ____  If “no”, will you reapply?___________
Optometry (OD): ____
Physical Therapy (DPT): ____
Physician Assistant (PA): ____
Nursing (BSN/RN/LVN): ____
Osteopathic (DO): ____
Health Administration: ____
Chiropractic (DC): ____
Other (please specify): ____

III. Graduate School Information:

PhD: _______________ (subject)  Accepted (yes/no): __________

Master’s: _______________ (subject)  School Name: _______________

Start Date: ______________________
PARTICIPATION DURING UNDERGRADUATE PROGRAM

I. I participated in an independent study while at Texas A&M (Please enter the total number of credit hours, not the number of semesters. Please check all that apply.):

285: ____________ total number of credit hours
485: ____________ total number of credit hours
491: ____________ total number of credit hours
484: ____________ total number of credit hours

I wrote an undergraduate thesis (yes/no): ______________
Ex. If you completed 2 semesters of 484, you completed 4 total credit hours.

II. I participated in a multicultural experience while at Texas A&M:
A. I completed the “Spanish Certificate” in BIMS (yes/no): ____________
B. I completed a formal Study Abroad program (yes/no): ____________
   If “yes”: i. To which country(ies) did you travel? ______________
   ii. Was/were the trip(s) required for the Spanish certificate program? (yes/no): ____
   iii. Was/were the trip(s) required for a minor, double major or double degree? (yes/no): __
C. I volunteered and/or worked abroad (yes/no): ____________________________
   If “yes”: i. To which country(ies) did you travel? ____________________________
   ii. Was the work/volunteering part of a co-op, EUSA, or L.T. Jordan internship? (yes/no)
   iii. Please list the organization/company for which you worked: ______________
D. I volunteered and/or worked domestically for an organization that aids the underserved (yes/no): ____________
   If “yes”: Please list the organizations for which you worked and the total numbers of hours you worked/volunteered for each: ____________________________
E. I completed a minor, double-major, or double degree in a language or in International Studies (yes/no): ____________
   If “yes”: Please describe whether it was a minor, double-major, or double degree and the subject in which you achieved this honor. ____________________________
   (Please list all that apply.)

State law requires that you be informed of the following: (1) you are entitled to request to be informed about the information about yourself collected by the use of this form (with a few exceptions as provided by law); (2) you are entitled to receive and review that information; and (3) you are entitled to have the information corrected at no charge to you.
Appendix XI. New BIMS 491 Writing Intensive Research Course

General Description BIMS 491: This course is meant to be a culmination of an undergraduate research project lasting at least two semesters.

- Biomedical Sciences student
- 3.0 overall TAMU GPA
- Junior/Senior classification
- Common Body of Knowledge courses completed
- Completed at least 3 hours of BIMS 485 credit
- Preferred: Completed at least one BIMS 481 (Seminar in Writing) credit

Through bench research, literature review, and discussion with your faculty research advisor you are to produce quality scientific writing. This writing will take a variety of forms, including a literature review, an abstract, and a research summary. In some cases, you may write an undergraduate thesis. You are highly encouraged to present during Student Research Week. This course qualifies as writing intensive; therefore drafting, receiving feedback, and revising are integral to it.

Grade Basis for BIMS 491:

This course is graded on letter grade scale as given below. Percentages for each assignment are as follows:

- 2.5% each = 5% of grade: Attend two writing workshops through the University Writing Center, the Texas A&M University Honors Programs, or the Texas A&M University Office of Undergraduate Research. Students should submit a list of at least three items learned at each of the two workshops.
- 25% of grade: Complete wet lab research pertaining to your writing project. Students should discuss these 25 points with the professor mentor to ensure expectations are met. Laboratory Safety training should be completed) and on file with your research mentor.
- 70% of grade: Complete five writing assignments (each including a rough draft and a final draft) as given below

A) Literature Review and Scientific Hypothesis: 10%
B) Materials and Methods and Summary of Results: 10%
C) Draft of Research Conclusions/Discussion: 10%
D) Abstract: 10%
E) Journal Article or Thesis: 30%

You may also be asked to complete any additional requirements for the (Honors) Undergraduate Research Fellows Program or the Undergraduate Research Scholar Program through the Texas A&M University Office of Undergraduate Research. (Students participating in these programs will receive details from the respective offices.)

Course Content/Writing Content BIMS 491:

1. Student is expected to be in the laboratory or the library for a minimum of 10 hours/week. This will require students to complete all appropriate laboratory safety training courses and to sign a safety agreement form. Students should check with their professor mentor to accomplish this task.
2. Student is expected to attend two writing seminars through the University Writing Center, the Texas A&M University Honors Programs, or the Texas A&M University Office of Undergraduate Research. Attendance should be verified using the attached form.

3. First writing assignment: Literature Review with Hypothesis Statement: Papers, posters, conference presentations, and theses typically require an extensive review of the literature before writing. This first assignment should be a review of literature pertinent to your research project. It should encompass and build toward a purpose of study statement, including a background explanation for your research study. A strong scientific hypothesis should be included. This literature review should run at least 1000 words. Particular attention should be paid to proper citation. A reference list, in the format of the journal chosen as your course “text,” must be included. The reference list does not count in the 1000 words required for the review.

4. Second writing assignment: Materials and Methods and Summary of Results: All journal articles, posters and theses contain a detailed record of research methods. You should write a clear description of the procedures performed while completing your research. Research results are the heart of any original publication or presentation. The second assignment should include a summary of research results obtained in both this and previous semesters in the laboratory. The Materials and Methods will vary in length. The Summary of Results should run at least 600 words.

5. Third writing assignment: Draft of Research Conclusions/Discussion: This assignment should demonstrate research conclusions and integrate your findings with established knowledge detailed in the introduction/purpose of study. Discussions often include a few paragraphs on future directions your research may take. The conclusions/discussion should be 500-1000 words.

6. Fourth writing assignment: Abstract (This assignment will be due immediately after the third writing assignment.) A 150-word abstract suitable for a journal publication or a poster proposal should be written. The abstract should follow the format used in the journal chosen as a model.

7. Fifth writing assignment: Journal article or thesis: The culminating paper should incorporate or draw on each of the first four writing assignments. It should include an Introduction, a Methods section, a Results section, a Discussion, a final reference list, and any other needed components, including a title. This assignment should be at least 2000 words (not including the reference list). Particular care should be given to scientific accuracy, proper citations, audience, and goal of the work.
Honors and Awards Received by Biomedical Sciences Undergraduate Students

Academy for Future International Leaders: The Academy is coordinated through Study Abroad Programs in the International Programs for Students Office at Texas A&M University. As a program for student academic leadership development, the Academy is designed to help student participants gain a global perspective in their chosen field of study and acquire skills that will prepare them for leadership roles in the increasingly international 21st Century. The year-long program consisting of three components: the spring seminar, the mentoring program, and an optional summer international opportunity. Twenty-four students are selected to participate annually.

2003 Cristina Gurrola
    Jamie Mishler
2004 Brian Barras
2006 Diane Davis
    Steve Dorman
2007 Justin Dominguez
2008 Sheridan Fielding
    Collin Stewart
2009 Asher Schusterman
2010 Ryan Gunter
2010 Kelly Prendergast

The Brown Foundation-Earl Rudder Memorial Outstanding Student Award (This is the highest honor bestowed upon a graduating senior at Texas A&M University. Only two Brown-Rudder awards are presented each year)

Trenton R. Collier – 2002
    Jennifer Choi – 2009

Buck Weirus Spirit Award: This award honors up to 55 students each year for their outstanding contributions to student life programs at Texas A&M University.

2001 Christopher Baumbach
2002 Kevin Boehm
2001 Chesney Castleberry
2000 Khalilah Davis
2007 Susan Land Dugat
2008 Eric Elliott
2009 Brian Farr
2000 Alice Freeman
2006 Kayla Glover
2009 Mark Gold
2010 Bryan Greene
2000 Jessica Grimm
2000 Paula Hardeman
2006 Kathleen Harris
2007 Melia Jones
2001 Heather Klein
2000 Jeffrey Kuhlman
2000 David McGowan
2000 Kim Nguyen
2000 Gerardo Ortiz
2001 Russell Pendleton
2008 Kyle Sanchez
2000 Leticia Shanley
2000 Michael Sharma
2009 Collin Steward
2000 Oluwabamiwo Tuyo
2000 Gary Van Wagner
2006 Matthew Vasquez
Appendix XIII. Examples of Honors and Awards Received by Biomedical Sciences Undergraduate Students

Awards Received by Biomedical Sciences Undergraduate Students (con’t)

Gamma Sigma Delta - Outstanding Student Awards
Josh Kilpatrick - 2002
Jenny Van Winkle - 2002
Joseph Hicks - 2010

Thomas S. Gathright Scholar Academic Excellence Award: This award is given annually to the outstanding sophomore, junior, and senior of each academic college and recognizes outstanding scholastic achievement on a university-wide scale.

2000
Amber Callis
Cary Spratt
Jerry Polasek

2001
Callie Willingham
Linda Brown
Matthew Cannon

2002
Josh Kilpatrick
Jennifer Chenault
Rachel Stinson

2003
Jamie Mishler
Mandy Lockhart
Travis Cotton

2004
Travis Cotton
Alicia Niedzwecki
Scott Myser

2005
Ashley Wilcox
Melissa Halbur

2006
Robin Koester

2007
Katie Gore
Robert Aertker
Alicia Lay

2008
Michael Arquisola
Anjali Kohli
Alicia Lay

2009
Alexandra Duran
Benjamin Lang
Anjali Kohli

2010
Brittany DeHaan
Randall Holdgraf
Alejandro Perez

Phi Beta Kappa
2010
Aldo Martinez (Double Major with PSYC)

The Honor Society of Phi Kappa Phi Award of Excellence: Sixty fellowships are awarded per year nationally.

Scott Myser 2004
Travis Cotton 2005
Melissa Halbur 2006
Appendix XIII. Examples of Honors and Awards Received by Biomedical Sciences Undergraduate Students

Awards Received by Biomedical Sciences Undergraduate Students (con’t)

**Phi Kappa Phi Outstanding Junior:** This award recognizes one outstanding junior from each college per year.

- 2001  Suzanne Sarratt
- 2002  John Jefferson
- 2003  Scott Myser
- 2004  Travis Cotton
- 2005  Melissa Halbur
- 2006  Michaela Marek
- 2007  Carly Jones
- 2008  Tina Desai
- 2009  Aldo Martinez

**Student Body President**

Mark Gold - 2008-2009

**Student Employee of the Year**

Ieva Romenkova – 2010 (Nomination was made by Study Abroad Office)

**Texas A&M Corps of Cadet Leadership** (no data available prior to 2005)

- 2005  Wesley Tidwell – Commander, A-1
- 2006  Jose Burgos – Commander, Squadron 21
  - Brian Kendall – Commander, A-Battery
- 2007  Benjamin Grimme – Major Unit commander, 2nd Regiment
  - Treyce Simko – Major Unit Commander, 2nd Wing
- 2008  John Morello – Commander, E-2
- 2009  John Banowsky – Commander, Corps Center Guard
- 2010  Taharka McCleave – Commander, C-1
- 2011  John Therwhanger – Commander, Squadron 2
- 2012  Marshall Atwood – 1st Sergeant P-2
  - Clayton, Kruger – Corps Recruiting Sergeant
  - Patrick Reeves – Corps Sergeant Major
Appendix XIII. CVM Faculty Who Teach BIMS Didactic Courses and Mentor Experiential Courses

<table>
<thead>
<tr>
<th>Faculty</th>
<th>Department</th>
<th>Rank</th>
<th>Degrees</th>
<th>BIMS Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abbott, Louise</td>
<td>VIBS</td>
<td>Associate Professor</td>
<td>Ph.D., D.V.M.</td>
<td>VIBS 489*</td>
</tr>
<tr>
<td>Arosh, Joe</td>
<td>VIBS</td>
<td>Assistant Professor</td>
<td>B.V.Sc. (D.V.M.), M.V.Sc., Ph.D.</td>
<td>VIBS 489*</td>
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<tr>
<td>Ball, Judith</td>
<td>VTPB</td>
<td>Associate Professor</td>
<td>M.S., Ph.D.</td>
<td>VTPP 489*</td>
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<tr>
<td>Blue-McLendon, Alice</td>
<td>VTPP</td>
<td>Clinical Assistant Professor</td>
<td>D.V.M.</td>
<td>VTPP 323*</td>
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<tr>
<td>Brinkmeyer-Langford, Candice</td>
<td>VIBS</td>
<td>Assistant Research Scientist</td>
<td>Ph.D.</td>
<td>VIBS 404</td>
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<tr>
<td>Tiffany-Castiglioni, Evelyn</td>
<td>VIBS</td>
<td>Professor and Head, Associate Dean</td>
<td>Ph.D.</td>
<td>*</td>
</tr>
<tr>
<td>Chenault, Edith</td>
<td>VIBS</td>
<td>Lecturer</td>
<td>Ph.D.</td>
<td>BIMS 481 (W)</td>
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<tr>
<td>Claborn, Larry</td>
<td>VTPP</td>
<td>Professor Emeritus</td>
<td>D.V.M.</td>
<td>VTPP 425</td>
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<td>Cothran, Gus</td>
<td>VIBS</td>
<td>Clinical Professor</td>
<td>Ph.D.</td>
<td>BIMS 320, GENE 320*</td>
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<td>Criscitiello, Michael</td>
<td>VTPB</td>
<td>Assistant Professor</td>
<td>Ph.D.</td>
<td>VTPB 415*</td>
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<td>Crouch, Elizabeth</td>
<td>VIBS</td>
<td>Lecturer</td>
<td>Ph.D.</td>
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<td>Curley, Kevin</td>
<td>VIBS</td>
<td>Lecturer</td>
<td>M.S.</td>
<td>BIMS 481 (W)</td>
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<td>Cyr, Tracy</td>
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<td>Clinical Assistant Professor</td>
<td>Ph.D.</td>
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<td>Davis, Don</td>
<td>VTPB</td>
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<td>Ph.D.</td>
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<td>Derr, James</td>
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<td>Ph.D.</td>
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<td>Dindot, Scott</td>
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<td>Ficht, Thomas</td>
<td>VTPB</td>
<td>Professor</td>
<td>Ph.D.</td>
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<tr>
<td>Frank-Cannon, Tamy</td>
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<td>D.V.M., Ph.D.</td>
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<td>Funkhouser, Norma</td>
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<td>B.A., M.L.I.S.</td>
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<td>Gastel, Barbara</td>
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<td>M.P.H., M.D.</td>
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<td>Ph.D.</td>
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<td>Herman, James</td>
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<td>D.V.M., Ph.D.</td>
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<td>Hoffman, Anton</td>
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<td>Ph.D.</td>
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<td>Ko, Gladys</td>
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<td>Laine, Glen</td>
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<td>Professor and Head</td>
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<td>Assistant Dean</td>
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<td>Professor and Head</td>
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<td>Lupiani, Blanca</td>
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<td>McDonald, Thomas</td>
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<td>Murphy, William</td>
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<td>Musser, Jeffrey</td>
<td>VTPB</td>
<td>Clinical Associate Professor</td>
<td>D.V.M., Ph.D., Diplomate Dairy Specialty-American Board of Veterinary Practitioners</td>
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<td>Mwangi, Waithaka</td>
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<td>Omran, Tawfik</td>
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<td>Pine, Michelle</td>
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<td>Ramanathan, Balaji</td>
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<td>B.V.Sc. (D.V.M.), M.S., Ph.D.</td>
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<td>Reddy, Sanjay</td>
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<td>B.V.Sc. (D.V.M.), M.S., Ph.D., Diplomate-American College of Veterinary Microbiologists</td>
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<td>Snell, Jim</td>
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<td>Venkatraj, Jijayanagaram</td>
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<td>B.V.Sc. (D.V.M.), Ph.D., Fellow of the American College of Medical Genetics</td>
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<td>Distinguished Professor</td>
<td>Ph.D.</td>
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* Also supervises 285, 485 and 491 Students.
Faculty Research Interests
College of Veterinary Medicine and Biomedical Sciences
Texas A&M University

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Abbott, Louise C. -- developmental neurobiology of the mammalian nervous system; neuroanatomy; neurochemistry; specific neurologic disorders including ataxia and epilepsy; developmental neurotoxicology with special interest in mercury toxicity and autism; environmental influences on the pathogenesis of neurodegenerative diseases with special interest in Alzheimer’s disease; programmed cell death (apoptosis) in the developing and adult nervous system.

Arosh, Joe – central role of prostaglandins on molecular and cellular aspects of reproductive processes, gynecologic diseases and endocrine cancers.

Banu-Arosh, Sakhila K. – Endocrine toxicology; endocrine oncology; heavy metal endocrine disruptors on female reproductive tract development and function; vitamin C and nutrioxidants' intervention on heavy metal-induced toxicity; prostaglandin biosynthesis, signaling and transport on mammary gland cancer development.

Bazer, Fuller W. (Joint Appointment) -- reproductive physiology; reproductive endocrinology; uterine biology; pregnancy; reproductive immunology; and fetal-placental development.

Bratton, Gerald R. -- gross anatomy; neuroanatomy; nutritional influences on lead intoxication; metal effects on reproductive function; localization of central nervous system neurons and their peripheral distribution.

Budke, Christine -- Epidemiology; burden of disease indicators; zoonotic diseases (larval cestodes); transmission dynamics of parasitic diseases; international veterinary medicine and public health.

Burghardt, Robert C. -- cellular signaling and signal transduction; reproductive physiology; pregnancy and parturition; development/application on non-invasive imaging tools using biosensors and biomarkers; in vitro toxicology.

Chapkin, Robert S. (Joint Appointment) -- chemoprevention; dietary effects on chronic inflammation, T-cell biology and colon cancer; plasma membrane microdomain organization and protein trafficking; functional genomics and systems biology.
Chowdhary, Bhanu -- comparative genomics of domesticated animals; molecular cytogenetics; equine genome analysis; physical and comparative gene mapping; disease genetics; molecular analysis of equine fertility; functional analysis of the equine genome.

Cothran, Ernest (Gus) -- heredity basis of equine congenital defects, interrelationships of inbreeding, genetic polymorphism, and reproductive performance in horses, population genetics of feral horses, comparative aspects of genetics variation in horses under human selection and under natural selection, genetic aspects of captivity. Management of genetic polymorphism in small populations, genetic relationship among domestic horse breeds, changes in gene regulation based upon environmental factors, gene mapping of the horse, gene mapping of the alpaca.

Dees, W. Les -- neuroendocrinology; reproductive physiology; puberty and sexual maturation.

Finnell, Richard H. (Joint Appointment) -- developmental biology/embryology, gene-teratogen interactions; molecular analyses of genetic diseases and development of animal models of human genetic disorders; molecular dysmorphology; clinical genetics.

Frank-Cannon, Tamy -- Students will be given a personal advanced anatomy project to complete during the semester as well as assist Anatomy Lab staff with various concurrent projects. General lab projects may include working with large, small, and exotic species for skeletal specimens as well as wet specimens. Requirements: VIBS 305, with a course grade A or B preferred. 1-3 Credit Hours.

Funkhouser, Norma (Joint Appointment) -- information management education; organization, retrieval and database searching methods; new technology for information management; computer-aided instruction; web-based instruction/tutorials.

Gastel, Barbara -- science journalism; scholarly communication of science; science editing; international science communication; medical communication.

Geller, Susan C. (Joint Appointment) -- bioinformatics; statistics; commutative algebra / k-theory / cyclic homology.

Ing, Nancy H. (Joint Appointment) -- molecular endocrinology, steroid regulation of gene expression, functional genomics, uterine and testis function.

Ivanek-Miojevic, Renata. -- Analytical epidemiology; Mathematical modeling; Spatial epidemiology; Public health; Food safety; Risk assessment; Microarray analysis; and Epidemiology, ecology and evolution of infectious and foodborne pathogens, including antimicrobial resistance.

Janecka, Jan -- Phylogeography, population genetics, and ecology of snow leopards, ocelots, bobcats, and other felids; adaptation to high-altitude; wildlife in Central Asia; noninvasive genetic surveys; phylogeny and evolution of mammals; wildlife conservation.
Johnson, Greg A. -- reproductive physiology; molecular, cellular, and physiological mechanisms that influence uterine function, conceptus development, and implantation/placentation in mammals.

Johnson, Larry -- toxicology; histology; spermatogenesis; gamete physiology; gene expression of Sertoli cells; aging of the testis; seasonal reproductive changes; infertility in males and promotion of science in youth.

Klemm, William R. -- neurobiology; neurophysiology; neuropharmacology; brain mechanisms of catalepsy; electroencephalography and cognition; educational technology.

Ko, Gladys Y.-P. -- neuroscience; cell biology; chronobiology; circadian regulation of retina physiology and synaptic plasticity; signal transduction and ion channel modulation; electrophysiology including patch-clamp, intracellular, and extracellular recordings; neuroanatomy including confocal imaging and TEM; neurochemistry; neuropharmacology; molecular biology.

Li, Jianrong -- mechanisms underlying the effects of neuroimmune molecules in the mammalian central nervous system on oligodendrocyte development, myelination, demyelination and/or remyelination. Interactions among oligodendrocytes, microglia, neurons and astrocytes under physiological and pathophysiological conditions, and identification of key targets for therapeutic approaches.

Lupton, Joanne (Joint Appointment) -- cell biology; digestive anatomy; physiological effects of dietary fibers; serum lipids; colonic physiology and morphology.

McDonald, Thomas (Joint Appointment) -- complex mixture interactions; environmental sampling and remediation.

McMurray, David N. (Joint Appointment) -- cell biology; immunology; infectious disease resistance; effect of nutrition on immunity; and experimental tuberculosis.

Murphy, William -- Feline genomics; mammalian comparative genomics and genome evolution; mammalian molecular phylogenetics; sex chromosome genes and hybrid sterility.

Norby, Bo -- analytical epidemiology; epidemiology of disease detection and surveillance; risk communication; evolutionary microbiology/biology; tuberculosis and paratuberculosis in cattle; foreign animal and zoonotic disease defense (Biodefense); evolution, ecology and transmission of antimicrobial –resistant bacteria in animal and human populations.

Phillips, Timothy D. -- food safety; molecular toxicology; elucidation of fundamental chemical mechanisms of toxic action/interaction of food-borne carcinogens; mutagens; and
developmental toxicants; and development of methods to detect and detoxify foodborne and environmental toxins.

**Pine, Michelle D.** – neurotoxicology; neuroendocrinology; the mechanism underlying the effects of pesticides (particularly synthetic pyrethroids) on neurodevelopment.

**Porter, Weston W.** – role of transcription factors in mammary gland development and breast cancer; stromal-epithelial interactions; environmental influences on development and breast cancer; mouse models

**Ramanathan, Balaji** -- Antiviral immunity, Innate immunity, Cancer, Drug discovery (Nanotechnology) and Stem cell research

**Raudsepp, Terje** -- reproduction genomics (horse); organization, function & evolution of mammalian sex chromosomes; animal cytogenetics & gene mapping.

**Reagor, John C.** (Joint Appointment) -- clinical toxicology; nutritional toxicology; metal toxicology.

**Russell, Leon H.** -- epidemiology; medical mycology; zoonotic diseases (rabies); food toxicology.

**Samollow, Paul B.** – comparative functional genomics and genome evolution of vertebrates; genome annotation; linkage and physical map construction; mapping of genes (QTL) influencing physiologic and health-related traits; sex-specific patterns of meiotic recombination; genetic determinants of environmental carcinogenesis.

**Skow, Loren C.** -- Comparative genomics of mammals with emphasis on organization and evolution of the mammalian genome; molecular analysis of the major histocompatibility complex of hoofed animals; genetic mechanisms of inherent resistance to infectious diseases.

**Slater, Margaret R.** -- epidemiology; nutrition and chronic disease in companion animals; human-animal interaction; pet overpopulation; free-roaming dog and cat issues and control.

**Spencer, Thomas E.** – (Joint Appointment) reproductive biology; physiological genomics; molecular, cellular, and physiological mechanisms that regulate development and function of the uterus and placenta in mammals.

**Tiffany-Castiglioni, Evelyn** -- cell biology; cellular mechanisms of neurotoxicity; functions of neuroglia; astroglial response to disease and trauma.

**Welsh, C. Jane** -- neuroimmunology, neurovirology, psychoneuroimmunology, cell biology, viral infections of the central nervous system, animal models of multiple sclerosis,
autoimmune diseases, effects of stress on viral pathogenesis, mechanisms of virus-induced apoptosis in the central nervous system, cerebrovascular endothelial cells and blood-brain barrier function, therapies for multiple sclerosis, factors involved in susceptibility to multiple sclerosis.

Welsh Jr., Thomas H. (Joint Appointment) -- endocrine physiology; investigate growth; stress; and reproductive biology; especially interactions of adrenal; reproductive and immune systems.
Arnold, Carolyn – Soft tissue surgery with an emphasis in upper airway and reproductive surgery, wound healing and tissue engineering.

Bissett, Wesley T. – Investigation of the spatial distribution of adverse effects associated with exposure to industrial pollutants with an emphasis on genotoxicity in food animals and marine species. Investigation of adverse responses in sentinel species in close proximity to industrial and Superfund sites.

Blanchard, Terry L. – Stallion and mare fertility and infertility.

Brinsko, Steven P. – Equine reproduction; semen lipids; sperm membrane function; and semen preservation.

Carter, G. Kent – Equine lameness.

Chaffin, M. Keith – Equine internal medicine; equine respiratory disease; equine pediatrics; equine ultrasonographic imaging; Rhodococcus equi foal pneumonia; and equine infectious disease.

Cohen, Noah D. – Equine epidemiology; equine infectious diseases; clinical epidemiology; genetic and molecular epidemiology.

Dabareiner, Robin M. – Joint pathology; degenerative joint disease; navicular diseases; corrective shoeing; microvascular pathology; equine lameness and gastrointestinal disease, i.e., colic; osteoarthritis; and western performance events.

Davidson, John M. – Beef Cattle Production Medicine, Diseases affecting beef cattle fertility, and Recruitment and Retention of Rural Practitioners.

Dinges, Lewis R. – Beef cattle production medicine.

Easterwood, Leslie – Skin tumors in horses, and equine ophthalmology.

Eichelberger, Bunita – Musculoskeletal MRI, musculoskeletal ultrasound, interventional radiology.
Faries, Jr., Floron C. – Clinical epidemiology, biosecurity, bovine parasitology, beef herd health management, and veterinary science youth career development.

Gold, Jenifer R. – Equine neonatology—specifically sepsis and the HPA axis; equine respiratory disease, equine immunology, emergency medicine and critical care.

Griffin, Cleet – Topics and clinical problems related to equine dentistry.


Lawhorn, D. Bruce – Swine biologic safety and efficacy testing; new swine surgical techniques (research swine, show swine, pet pigs, potbellied pigs); and swine as biomedical models for human diseases.

Love, Charles – Equine reproduction; sperm function; evaluation of fertility; and flow cytometry.


Mays, Glennon B. – Infectious disease epidemiology in livestock, theriogenology in livestock, and equine dentistry.

Moyer, William A. – Racetrack safety and design; foot problems and shoeing; musculoskeletal injuries; effects of training on injury.

Mulan, Pierre-Yves – Bovine orthopedics, minimally invasive surgery, teats surgery.

Norman, Tracy – Equine internal medicine; equine diagnostic ultrasound.

Posey, R. Dan – Beef cattle production medicine; issues associated with sustainable agriculture; instruction and teaching of non-technical competencies, and outcome assessment in teaching.

Rakestraw, P.C. – Post-operative complications of equine colic; gastrointestinal motility; postoperative ileus; upper airway disease in horses; equine pharyngeal cicatrix syndrome; wound healing in horses.

Romano, Juan – Pregnancy diagnosis in ruminants and pregnancy loss in ruminants.

Roussel, Allen J., Jr. – Paratuberculosis; gastrointestinal motility of domestic animals.
Schmitz, David G. – Diagnostic ultrasonography.

Spaulding, Kathy – Abdominal ultrasound: vascular anomalies; gastrointestinal abnormalities; biliary disease.

Swor, Tamara – Equine gastrointestinal and orthopedic surgery; equine emergency and critical care.

Thompson, James A. – Environmental health, reproduction and cancer.

Varner, Dickson D. – Fertility probes for stallions; in-vitro preservation of equine spermatozoa; capacitation of equine spermatozoa; assisted reproductive techniques; and subfertility in stallions.

Walker, Michael A. – Radiation oncology.

Washburn, Kevin E. – Developing and investigating the disposition of extra-label antimicrobials in small ruminants; pharmacokinetics of respiratory antimicrobials; comparison of different treatment modalities for small ruminant caseous lymphadenitis; the value of the HI test for diagnosis of small ruminants with caseous lymphadenitis; diagnosis of transmission of CAEV via colostrum; and antemortem diagnosis of malignant lymphoma in cattle. Investigating infection of swine with Mycobacterium avium subspecies paratuberculosis in attempts to create an animal model for human inflammatory bowel disease.

Watkins, Jeffrey P. – Equine fracture management including: intramedullary interlocking nail fixation; fracture biomechanics; biomaterials; implant design and testing; arthrodesis techniques; management of infection; and orthopedic applications of stem cell therapy.

Young, Ben – Small animal abdominal ultrasonography; MRI of neurologic disease.
Adams, L. Garry  Select agents – Intracellular bacterial pathogens - Brucella, Mycobacterium, Salmonella and Mycoplasma; infectious diseases; molecular mechanisms of host-pathogen interaction in immunity and disease; intracellular pathogens; molecular basis of disease resistance; macrophage function; molecular pathogenesis; comparative host-pathogen genomics, transcriptomics and proteomics; pathomics and interactomics; food animals; diagnostics; vaccines: therapeutics; biodefense; homeland security; BSL3 and BSL3Ag.

Ball, Judith M.  Our studies focus on the molecular and biochemical aspects of viruses, interactions of viral proteins with host cell moieties and intracellular transport. The overall goal of our work is to identify unique therapeutic targets for viral intervention. We employ a multitude of techniques such as yeast two-hybrid assays, laser-scanning confocal microscopic techniques (single and multiphoton), synthetic peptide chemistry, protein analyses and mutagenesis studies. Our primary interest is rotavirus, the single most important cause of pediatric, life-threatening gastroenteritis that annually claims ~610,000 young lives worldwide and results in hospitalization of 1 in 60 children in the U.S. at an annual cost of one billion dollars. We also study other viral systems that impact human and animal health with a focus on dissecting the association viral proteins with plasma membrane microdomains, such as caveolae.

Bazer, Fuller W.  Reproductive biology with emphasis on uterine biology and pregnancy. Mechanisms of action of pregnancy recognition signals from the conceptus to the maternal uterus, including interferon tau and estrogen from ruminant and pig conceptuses, respectively, are studied at the molecular and cellular levels. The roles of uterine secretions as transport proteins, regulatory molecules, growth factors and enzymes and endocrine regulation of their secretion is another major research interest. The endocrinology of pregnancy, especially the roles of lactogenic and growth hormones in fetal-placental development and uterine functions are being studied. The mechanism(s) of action and potential therapeutic value of conceptus interferons and uterine-derived hematopoietic growth factors are areas of research with both pigs and sheep as models for human disease.

Berghman, Luc  Major long-term goals are (1) to acquire fundamental new knowledge of avian immune system and (2) to apply this new knowledge toward the development of immunobotechnological tools. Basic avian immune studies include the study of cellular and humoral interactions, especially those of immuno-neuroendocrine nature, in the bursa of Fabricius, the thymus and secondary immune organs of the chicken. This involves immunohistochemical microanatomical studies and the study of gene expression profiles. Immunobiotechnological applications include the development of monoclonal antibodies, polyclonal antibodies and chicken egg yolk antibodies for diagnostic, prophylactic and therapeutic purposes. Current projects feature the development of antibodies for the prevention of invasion and/or persistence of enteric pathogens in poultry, and the development of immunodiagnostic and analytical tools for the detection and identification of avian viruses and other antigens.
Brightsmith, Donald J.  Avian diseases; avian ecology; geophagy (consumption of soil); avian conservation; disease threats from the live bird trade; diets of wild and captive exotic birds; role of infectious diseases in wild and endangered bird populations. Specialization in psittacines (parrots, macaws, parakeets and allies).

Caldwell, David J.  Avian immunology; gut immunology in commercial poultry; immunopotentiation of the innate immune system in poultry; immunity to important poultry pathogens such as *Salmonella* and *Coccidia*.

Clubb, Fred  Electron microscopic evaluation of myocardial and renal biopsies; qualitative and quantitative evaluation of implantable cardiovascular devices for nonGLP and GLP preclinical trials.

Conover, Gloria M.  Our research is focused on the cell biology of muscle disease. Mutations in desmin have been identified in humans as causative for dilated and restrictive cardiomyopathies. Our goal is to decipher the molecular and regulatory mechanisms underlying how inherited single missense mutations in desmin lead to cardiac and skeletal muscle dysfunction. In particular, we are interested in studying the effect that these mutations have on sarcomere protein function and actin cytoskeletal dynamics. We use advanced cell biological and biochemical approaches to investigate the histological, physiological and ultrastructural impact that these mutations confer in live muscle cells.

Corapi, Wayne V.  Diagnostic pathology and infectious diseases of domestic animals, particularly viral diseases and the immune response to viral infections.

Craig, Thomas M.  Primary interest is in the epidemiology and control of internal parasites of grazing animals, including improved diagnostics, evaluation of and sustainable use of anthelmintics. Anthelmintic resistance is an increasing problem. Identifying the problem before it occurs by looking at both the worm and the hosts are important aspects of this research. Exploitation of the parasite at times of vulnerability by management is an area of interest. Research in arthropod borne protozoan infections including pathogenesis and the epidemiology of parasites of man and domesticated animals is also something I do.

Criscitiello, Michael I am interested in diverse mechanisms by which adaptive immunity can be mediated: novel receptors, novel cells, novel lymphoid architectures, novel paratopes and novel systems for repertoire generation and selection. These have been devised by natural selection and battle-tested in the myriad of vertebrate adaptive immune systems. By studying unconventional comparative models such as shark and frog, hypotheses of immune system origins and natural history are tested while discovering new ways of achieving lymphocyte repertoires that protect against pathogens while limiting autoimmunity and hypersensitivity.

Cyr, Tracy  As a Med/Vet Entomologist, my research interests focus on vector borne diseases affecting humans and animals. I especially enjoy involving students in short-term directed scientific research projects with both field and lab components. My research studies include avian hemoprotozoan parasites and their insect vectors, epidemiology of fly vectors of EHD in white-tailed deer, and the utilization of molecular methods to identify flies of forensic importance.

Dai, Susie Y.  My research interests focus on several aspects: 1) Proteomics and interactomics in cancer and bioenergy. 2) Protein structure dynamics and structure-function relationship study with a focus in nuclear receptor and cellulase enzymes. 3) Biomonitoring programs which include analyzing veterinary drugs, mycotoxins, etc., in feed and food. We utilize a variety of techniques including shotgun proteomics, hydrogen deuterium exchange mass spectrometry and mass-spec based multiple target...
analysis. The major goals of the lab are: 1) Establish systems biology approaches to characterize and elucidate protein-protein interaction and mechanistic study of protein functions with the ultimate goal for novel therapies in cancer and breakthroughs for bioenergy production. 2) Develop methods for food and feed safety monitoring programs in a high throughput, multiple reside based fashion.

**Davis, Donald S.** Infectious and parasitic diseases of native, exotic and/or feral wildlife captive or free-ranging, particularly those shared with traditional domestic livestock, farmed/ranched ungulates, and/or humans, with emphasis on experimental, controlled infections to evaluate improved diagnostics vaccines suitable for wildlife, and the systems to deliver chemotherapeutic agents or vaccines to wildlife. Development of handling and restraint facilities appropriate for captive wildlife, and natural (genetic) disease resistance in wildlife. Brucellosis, tuberculosis, anthrax, hemaptozoa, nematodes, and protozoa.

**Derr, James N.** Molecular genetics of mammals including; characterization of genetic traits and disease, population and conservation genetics, and the evolution of genes and genomes at the nucleotide level in domestic and wild populations.

**Dindot, Scott V.** My laboratory is interested in understanding the epigenetic and genetic mechanisms of gene regulation and their role in development and disease. We utilize genome-wide epigenomic and genomic profiling approaches to identify regulatory elements within the genome that are essential for proper gene expression. We combine these approaches with genetic analyses in mouse and fruit fly model systems to further elucidate the functional interplay between epigenetics, genetics, and gene regulation. In particular, my laboratory is interested in the study of genomic imprinting in domestic animals and model organisms. The long-term goals of my laboratory are to identify variable or dysregulated epigenetic modifications that are causal for phenotypic variation, disease, and disease susceptibility. Other work in my laboratory is to develop customized genomic tiling arrays to investigate the role of gene copy number variation in phenotypic variability in domestic animals and to identify pathologic rearrangements in the genomes of domestic animals to develop alternate models for human genetic conditions.

**Edwards, John F.** Diagnostic pathology, infectious diseases of domestic livestock particularly of cattle and horses; in utero teratogenicity (viral and toxic), pathology of the reproductive system and infertility; diseases of the fetus and neonate; food safety of red meat species, pathology of animals at slaughter.

**Esteve-Gassent, Maria --** My laboratory is interested in understanding how *Borrelia burgdorferi*, the causative agent of Lyme disease, counteracts oxidative and nitrosative stress upon transmission to the mammalian host. The ability of *B. burgdorferi* to colonize mammals is dependent on its ability to rapidly alter gene expression in response to highly disparate environmental signals following transmission from infected ticks. Furthermore, this bacterium has a very limited number of genes involved in counteracting oxidative and nitrosative stress, with one single superoxide dismutase (sodA) and no typical catalases and peroxidases. We have demonstrated that the sodA gene is essential for infectivity in the mouse model. Therefore, our goal is to further analyze the molecular mechanisms adopted by *B. burgdorferi* to combat reactive oxygen and nitrogen species, and to dissect critical physiological responses against these stressors in the processes facilitating colonization of the mammalian hosts. We are also interested in a new family of membrane proteins, known as von Willebrand factor A containing proteins (VWFA), which have been described in other bacterial pathogens as potential adhesines. Our
main goal is to understand the topology, insertion in the membranes and function of these proteins in *B. burgdorferi* during transmission from the infected tick to the mammalian host.

**Ficht, Thomas A.**  Mechanisms of invasion and survival of intracellular bacteria within host cells; study of bacterial and host gene expression during infection and its use in the development and application of biosignatures; development of improved vaccines using genetic approaches to attenuate survival and identify therapeutic targets; development of subunit vaccines. Characterization of bacterial population structures through genomic analysis.

**Giri, Dipak**  My research interests focus on the human equivalent of animal diseases with an objective of establishing animal models; diagnostic pathology of domestic animals with special emphasis on neoplasms; safety and efficacy of xenobiotics, recombinant proteins, synthetic peptides, mutant bacteria and small molecules; histological evaluation of genetically modified mouse; tumor markers and metastasis; epithelial-mesenchymal interaction and the role of cytokines, polypeptide growth factors and their receptors in tumor growth. Collaborative research: assessment of skeletal and visceral metastases in xenograft and orthotopic models and the role of molecular therapeutics in containing distance metastasis.

**Halbert, Natalie D.**  Population genetics and genomics of wild and domesticated species; introgressive hybridization and the detection of interspecies DNA introgression; effects of wildlife management on genetic variability and genome conservation; sources and patterns of genetic variation underlying disease susceptibility.

**Holman, Patricia J.**  Molecular mechanisms driving interactions between *Babesia* spp. and their hosts; characterization of potential vaccine or drug targets for babesiosis; molecular phylogeny of the hemoparasites; genetic basis of bovine resistance/susceptibility to ectoparasitism.

**Hong, Don**  Genetic basis of retinal degeneration; molecular and cellular basis of pathogenesis caused by mutations in retinal degenerative disease genes; develop gene therapy through the genetic and cellular understanding of retinal biology and disease pathogenesis.

**Jeter, Elizabeth**  Animal Shelter Medicine  Participates in the veterinary student rotations at the Brazos Valley Animal Shelter.

**Johnson, Mark C.**  Professional courses in pathology and service/teaching responsibilities including clinical pathology hospital service. Diagnostic and investigative immunopathology with emphasis on immunohistochemistry and immunocytochemistry interpretations for characterization of lymphoma and other neoplasia.


**Kier, Ann B.**  Understanding the actions of intracellular lipid binding proteins in fat and carbohydrate metabolism: using biochemical, structural and molecular biological approaches, how these proteins affect lipid and sugar absorption and metabolism, and how they may serve as ligands for second messengers or activators for nuclear transcription factors. As well as *in vitro* studies, fat and sugar absorption,
trafficking, and pathology are studied in genetically altered mice over expressing the respective proteins or in gene deleted mice in which these proteins are not expressed. Collaborative research: pathology of transgenic mice.

**Lawhon, Sara**  My work seeks to understand, on a molecular level, the interactions between the intestinal pathogen, *Salmonella enterica*, and mammalian hosts. I am particularly interested in how *Salmonella* spp. regulate their genes in response to environmental signals present in the gastrointestinal tract, the pathogenic mechanisms by which *Salmonella* spp. induce enteritis and diarrhea in mammalian hosts, and how the host responds to Salmonella infection. I am also interested in how *Salmonella* spp. survive in the external environment and are transmitted within populations of cattle and other mammals.

**Leibowitz, Julian L.**  Replication and gene expression of coronaviruses, particularly mouse hepatitis virus (MHV) and the SARS coronavirus; the structure and function of the MHV and SARS coronavirus untranslated regions (UTRs); the interaction of MHV and SARS coronavirus UTRs with host cell proteins; virus-host interactions; molecular pathogenesis of MHV induced hepatitis, demyelination (a model of multiple sclerosis), and pneumonia (a model for SARS); platforms for the development of anti-virals for SARS coronavirus; intracellular signaling and patterns of gene expression during coronavirus infection.

**Libal, Melissa C.**  Epidemiology of infectious disease, antimicrobial sensitivity testing, bacterial antimicrobial resistance.

**Lupiani, Blanca**  Research in my laboratory focuses on the development of immunoassays for the early detection and rapid subtyping of AI viruses. We also carry out AI virus and avian paramyxovirus surveillance in wild waterfowl at wintering grounds of the Texas Coast. The viruses isolated are characterized at the molecular level and the data obtained used for epidemiological studies. Another aspect of my research includes the study of molecular mechanisms of pathogenesis of avian influenza (AI) viruses. Using reverse genetics, specific mutations are introduced in the AI genome in order to study their role in virus pathogenesis as well as to determine gene function. Using genomic approaches the host/virus interaction is also being studied.

**Mansell, Joanne**  Comparative pathology with particular interest in dermatopathology. The effects of systemic disease on skin. The use of immunohistochemistry in neoplastic and inflammatory skin disease.

**Mora, Miguel**  My main research area is in wildlife toxicology. My laboratory conducts basic and applied research on the effects of contaminants on animal populations, with particular emphasis on birds. We conduct field and laboratory studies to determine the effects of persistent bioaccumulative toxicants, metals and other environmental pollutants on wildlife.

**Musser, Jeffrey**  Dairy production medicine, mastitis prevention and control, and quality milk production; pharmacokinetics in exotic and food animals and drug residue prevention.

**Mwangi, Waithaka**  Research focuses on methods to improve vaccine efficacy in livestock and humans. Studies are primarily directed at optimizing *in vivo* antigen presentation by dendritic cells following immunization using DNA and live vaccines. Evaluating defined dendritic cell activation factors for their potency in enhancing vaccine immunogenicity in an outbred species model. Strategies for induction and maintenance of memory cellular immune responses in outbred species are also being evaluated. Defining key molecular processes involved in the development and regulation of innate immunity and the influence of these processes on the development of adaptive immune response. Interaction between dendritic cells
and food animal pathogens, especially zoonotic, is an area under development and is expected to define correlates of protection needed for vaccine design.

**Nabity, Mary** Renal pathology and its relation to the urine proteome: evaluation of changes in urine proteins with naturally progressive renal disease, and identification of novel clinical biomarkers for early detection and progression of renal disease.

**Omran, Tawfik** Immunopathogenesis and host immune response to infectious and noninfectious disease; signal transduction in inflammation. Specific interests include Lyme Disease (*Borrelia burgdorferi*) infection, pathogenesis, and vaccine studies in humans and animal models.

**Osterstock, Jason** Veterinary epidemiology with emphasis on beef cattle production systems. Specific research areas include epidemiology and familial aggregation of paratuberculosis in beef cattle, genetic resistance to infectious disease, microbial ecology in intensive animal agriculture, and analytical epidemiology including application of hierarchical models to describe risk factors for infectious disease in ruminants.

**Parr, Rebecca** Rotavirus and host protein: protein interactions that are involved in the intercellular movement of viral proteins and their biological significance. Identification of tissue-specific host genes that are differentially regulated during a rotavirus infections. Morphogenesis of rotavirus interspecies strains focusing on the protein-protein interactions of viral proteins that affect the emergence of the reassorted rotavirus strains that are virulent in new hosts.

**Payne, Susan** Molecular aspects of retroviral replication, pathogenesis, and evolution focusing on equine infectious anemia virus as a model system. Specific studies include: evolution of virulence during rapid virus passage, modification of cell signaling pathways mediated by viral glycoproteins, effects of proinflammatory cytokines on virus replication and disease, detailed mapping of EIAV virulence determinants.

**Pool, Roy** Histopathologic diagnosis and investigations into the pathogenesis of spontaneous bone and joint diseases of domestic mammals with special interest in the diagnosis of bone and joint tumors and in the diagnosis and pathogenesis of musculoskeletal disorders of athletic horses.

**Porter, Brian F.** Comparative neuropathology; diseases of special interest include necrotizing meningoencephalitis of pug dogs and G\(_{M2}\) gangliosidosis in Jacob sheep; wildlife disease and environmental conservation.

**Reddy, Sanjay** The long-term goal of my laboratory is to understand the molecular basis of pathogenesis of Marek’s disease virus (MDV), a potent oncogenic herpesvirus that causes T-cell tumors in chickens. MDV codes for a protein (Meq), which shares significant resemblance with the Jun/Fos family of transcriptional factors. We have shown that this gene plays a critical role in latency and transformation of T-lymphocytes. Understanding the basic mechanism of viral pathogenesis will aid in the development of improved vaccine. We are also interested in other important poultry disease like avian influenza.

Rivera, Gonzalo M.  The long-term goal of our research is to understand how extracellular signals control actin dynamics and cell motility. We are particularly interested in regulation mediated by signals that alter tyrosine phosphorylation and inositol phospholipids. Current research projects are aimed at elucidating the role of Src homology 2 (SH2) and SH3 domain-containing adaptor proteins in actin-driven protrusion formation, adhesion turnover and cell migration. These adaptors can bind tyrosine phosphorylated proteins via SH2 domain-mediated interactions and engage, through their SH3 domains, proline-rich effectors involved in cytoskeletal remodeling. It is hypothesized that the SH2/SH3 domain-containing adaptors play a critical role in cell migration by modulating, in space and time, the activation of key effectors involved in protrusion and adhesion dynamics. Our recent data also suggest that the SH2/SH3 domain-containing adaptors may be a critical link between signaling mediated by tyrosine phosphorylation and inositol phospholipids to the actin cytoskeleton. To test these hypotheses we employ a combination of genetics, cell biology and proteomic approaches coupled to high resolution imaging of living cells.

Russell, Karen E.  Platelet pathophysiology and the interaction of platelets with infectious agents, with an emphasis on the thrombocytopenia associated with Equine Infectious Anemia Virus. Investigation of platelet activation markers in veterinary species. Investigation of total and free (ionized) magnesium concentrations in veterinary species.

Scanlan, Charles M.  Ecology and pathogenesis studies of selected foodborne pathogens of food-producing animals and poultry and their potential role in human foodborne infections. Specific pathogens include selected Escherichia coli and Salmonella serovars, Camplobacter jejuni, Clostridium difficile and Clostridium perfringens.

Investigations with a defined porcine culture with 15 bacterial species to prevent enteric bacterial infections in neonatal piglets are being conducted. These investigations are a component of the commercialization process for this product.

Seabury, Christopher M.  Mammalian genetics, with emphasis on bovine and cervid genomics, population genetics, and animal disease genomics; utilization of population and quantitative genetics to elucidate host loci and relevant variation influencing differential susceptibility to disease among mammalian species.

Smith III, Roger  Application of flow cytometry to study of animal disease and clinical veterinary medicine; core flow cytometry laboratory.

Snowden, Karen F.  Parasites of public health importance, host-parasite interactions, development of animal models for the study of parasitologic diseases and treatments, and development of molecular and immunologic methods for parasitologic diagnosis.

Steiner, Jörg Studies in small animal and comparative gastroenterology as it relates to etiology, pathophysiology, diagnosis, and treatment of gastrointestinal disorders, using technologies such as protein purification, immunoassay development and validation, molecular genetics, and proteomics.

Stoica, George  Mechanism(s) of retro viral-induced neurodegeneration. Pathogenesis of brain and bone metastases of mammary gland tumors; application of flow cytometry in the study of tumors; lectin and immunohistochemistry; chemical carcinogenesis; animal models for retro virus-induced neoplasia. Genetic alterations in tumors of the nervous system. Investigation into the mechanism(s) of

**Tizard, Ian R.** Comparative avian and mammalian immunology and the evolution of the immune system. Avian diseases. Avian phylogeny. Role of infectious diseases in wild and endangered bird populations.

**Waghela, Surya** Immunoparasitology; infectious diseases; emerging and foreign animal diseases, especially tick-borne diseases; use molecular biology techniques to develop better diagnostic tests and immunogens for infectious diseases in ruminants of tropical areas of the world; development of biopharmaceuticals and biosensors; engineer recombinant antibodies for diagnosis and prevention of infectious diseases.

**Wagner, G. Gale** The molecular basis of virulence of protozoal parasites, including identification of functional antigens for serodiagnosis and immunization. Host-parasite interrelationships, especially the role of the vector (if involved) in promoting infection, and in the prevalence and incidence of infections in areas of low vector populations.

**Weeks, Bradley R.** Diagnostic anatomic pathology; collaborative research of inflammatory and neoplastic gastrointestinal disease, and cardiovascular disease. Veterinary medical education, particularly general pathology.

**Wells, Gregg B.** Role of protein structure in disease, particularly in neurological disease; structure and function of the superfamily of neurotransmitter-gated ion channels that includes nicotinic acetylcholine, serotonin 5HT3, glycine, and GABAA,C receptors from eukaryotes and prokaryotes; interpreting electrophysiological properties of ligand gated ion channels in terms of structure and thermodynamics; computational models of functions of mechanotransduction channels and calcium and potassium ion channels to explain electrophysiological function of cochlear hair cells; clinical neuropathology.

**Welsh, C. Jane** Mechanisms by which viruses cause autoimmune diseases. Multiple sclerosis (MS) and Theiler's virus-induced demyelination (TVID) as a model of MS. Blood-brain barrier function. The role of stress in the neuropathogenesis of TVID. Novel therapies for the treatment of MS.

**Womack, James E.** Comparative mammalian genomics with emphasis on bovids and laboratory animals. Study of evolution of gene families and genomic variation underlying disease resistance. Investigation of genetic mechanisms in innate immunity with focus on livestock, select agents, and agricultural biosecurity.

**Zhu, Guan** Molecular biology, biochemistry and pathogenesis of parasitic protists; biosynthesis and metabolism of primary and secondary metabolites (lipids, carbohydrates, and polyketides, etc.) in apicomplexan parasites (*Cryptosporidium, Eimeria* and *Toxoplasma*); molecular interactions between parasites and host cells; DNA replication and regulations associated with the complex life cycle of apicomplexans; discovery and validation of molecular targets for the drug development against parasites; molecular phylogeny and evolution of apicomplexans.
**Zimmer, Danna**  Mammalian intracellular calcium signal transduction pathways and their role in the pathobiology of neurological disorders and cancers; molecular mechanisms and evolution of calcium receptor protein function; development and characterization of genetically modified mouse models.
Veterinary Physiology and Pharmacology
(979) 845-7261

Adams, H. Richard -- cardiovascular pharmacology and pathophysiology of circulatory shock

Bailey, E. Murl -- toxicology; veterinary toxicology; toxic plants; wildlife, and environmental
toxicology; anesthesiology; pharmacology; experimental surgery; clinical medicine;
emergency medicine, bioterrorism, weapons of mass destruction

Blue-McLendon, Alice -- veterinary physiology, avian reproductive physiology, medicine of
exotic animals, management of exotic animals teaching and research projects

Cudd, Timothy A. -- reflex control of endocrine and cardiovascular systems in the adult and
fetus; control of the timing of parturition; fetal alcohol syndrome; eicosanoids in the brain

Fajt, Virginia -- clinical pharmacology, antimicrobial therapy and dose design,
pharmacokinetics and pharmacodynamics, food animal therapeutics, evidence-based
medicine, teaching and outcomes assessment in pharmacology

Golding, Michael C. -- epigenetic mechanisms that control retroviral elements and other
parasitic DNA within the mammalian genome; applications using retroviral vectors to
make transgenic animals; function of non-coding RNAs.

Han, Guichun -- Cardiovascular physiology; vascular physiology and pharmacology, especially
signaling pathways for estrogen and selective estrogen receptor modulator (SERM)
effects on coronary artery; molecular mechanisms of estrogen receptors in vascular
remodeling and hypertension.

Heaps, Cristine -- Cardiovascular physiology and pathophysiology; effects of coronary artery
disease and exercise training on smooth muscle and endothelial function in the coronary
circulation

Herman, James -- evaluation of student and instructor performance; optimization of curricula
and the learning environment; modeling behavior of complex systems; application of
technology to the classroom

Hinrichs, Katrin -- equine reproductive physiology; oocyte maturation; fertilization; nuclear
transfer; early developmental biology of equine embryos; and assisted reproductive
techniques

Hood, David M. -- physiopathology of the digital cutaneous circulation
Hunter, Jon F. -- experiential learning in the physiology laboratory teaching environment; preparing undergraduate students for professional and graduate programs and careers in the allied health professions; development of products and the application of technology to enhance teaching and learning

Ivanov, Ivan V. -- genomic signal processing and mathematical modeling of genetic regulatory networks

Jones, Daniel H. -- veterinary and environmental toxicology

Kraemer, Duane C. -- gamete and embryo physiology; embryo transfer, cloning, genetic engineering of mammals; preservation of endangered animals; contraception in animal pests

Laine, Glen A. -- emergency and critical care medicine in trauma patients; biophysics and bioengineering; quantitative analysis of biological systems; fluid resuscitation; abdominal compartment syndrome; myocardial and pulmonary edema; cardiopulmonary bypass; lymphatic function; edema formation and interstitial fibrosis

Long, Charles -- developmental biology, gamete and embryo physiology, embryonic stem cells, assisted reproductive technologies, animal transgenics, somatic cell nuclear transfer, epigenetics and control of gene expression, RNA interference

Quick, Christopher M. -- cardiovascular engineering, modeling and simulation; interstitial fluid balance; lymphatic function, arterial hemodynamics and pulse wave phenomena; coordination of vascular adaptation in vascular networks.

Safe, Stephen H. -- toxicology and molecular biology of estrogenic and antiestrogenic compounds; molecular mechanisms of estrogen receptor and Ah receptor action and their crosstalk in breast cancer cells, PPARg agonists and inhibition of cancer cell growth

Sayes, Christie M. -- physicochemical characterization of nano-scale materials and bioavailable metals; in vitro and in vivo toxicological profiling of nanomaterials; environmental health and of safety of industrially-relevant and consumer-based particles; potential medicinal applications of nano-bio conjugates

 Schroeder, Friedhelm -- intracellular lipid transfer proteins; lipid metabolism; multiphoton imaging of intracellular lipid transport and targeting in living cells and tissues of gene targeted animals
Appendix XIII. CVM Faculty Who Teach BIMS Didactic Courses and Mentor Experiential Courses

Scott, Maya -- clinical pharmacology; therapeutic drug monitoring; pharmacology instruction; small animal therapeutics; adverse drug events; in vitro-in vivo correlation of drug-induced toxicity

Stallone, John -- vascular physiology and pharmacology; endocrinology; hypertension; gonadal steroid hormone regulation of vascular function, especially eicosanoid and nitric oxide interactions between vascular smooth muscle and endothelium

Stewart, Randolph -- cardiovascular physiology; lymphatic function; microvascular physiology; interstitial and cavity fluid balance

Tian, Yanan – epigenetic mechanisms of gene-environment interactions with emphasis on signaling cross-talk between nuclear receptor (PXR and AhR)-regulated detoxification pathways and NF-κB-regulated inflammatory pathways.

Wasser, Jeremy S. -- cardiovascular physiology; biological applications of magnetic resonance spectroscopy; comparative physiology of acid-base balance; mechanisms of hypoxia tolerance

Westhusin, Mark E. -- gamete physiology; developmental biology; embryo physiology; assisted reproductive techniques; in vitro fertilization; embryo transfer; cloning animals by nuclear transplantation, genetic engineering in animals, epigenetics and control of gene expression, RNA interference

Zhou, Beiyan – molecular genetics; genetic mapping of loci/genes underlying economic traits in poultry; molecular mechanisms of host defense against pathogens; identification and characterization of avian genes associated immunity; and phenotypic definition of genetic resistance to avian diseases
Appendix XIII.  CVM Faculty Who Teach BIMS Didactic Courses and Mentor Experiential Courses

Veterinary Small Animal Clinical Sciences
(979) 845-2351

August, John R.  – feline internal medicine; distance education; educational technology

Barr, James W.  – mechanical ventilation; coagulation; fluid therapy; transfusion medicine

Barton, Claudia L.  – oncology; small animal reproduction; aspiration cytology

Bauer, John E.  – nutrition; lipid biochemistry; disorders of lipid metabolism; obesity; weight management

Beaver, Bonnie V.  – normal and abnormal domestic animal behavior; human-animal interrelationships; animal welfare

Carroll, Gwendolyn L.  – anesthesiology; assessment of pain and stress; feline osteoarthritis; rehabilitation and recovery

Cook, Audrey  – internal medicine; endocrinology; gastroenterology

Crist, M. A.  – anesthesiology; physical medicine; rehab; pain management; dentistry; nutrition

Dodd, Johnathon  – dentistry

Dziezyc, Joan  – ophthalmology; ophthalmic surgery; ocular ultrasonography; ocular inflammation

Eckman, Stacy L.  – feline medicine; zoonotic diseases of companion animals; preventative medicine

Fossum, Theresa W.  – cardiovascular surgery; myocardial ischemia and angiogenesis; cardiac assist devices; cardiopulmonary bypass; hypertension; canine chronic degenerative valve disease; canine cardiomyopathy

Gordon, Sonya G.  – canine chronic degenerative valve disease; cardiovascular imaging; interventional cardiology; cardiac clinical trials

Griffin, Sarah C.  – Emergency Medicine
Appendix XIII. CVM Faculty Who Teach BIMS Didactic Courses and Mentor Experiential Courses

**Guedes, Alonso G.P.** – clinical anesthesiology; hormonal and cytokine regulation of intracellular calcium homeostasis in smooth muscle

**Hartsfield, Sandee M.** – anesthesiology; cardiopulmonary effects of anesthetics; anesthetic equipment

**Heatley, J. Jill** – fluid therapy; emergent & critical care; electrolytes of nondomestic species; wildlife population health biomonitoring

**Hicks, Daniel G.** – biomechanics of the spine, specifically, the effect of implant stabilization in the cervical spine and lumbosacral joint in dogs; canine cervical spondelomyelopathy (wobblers); traumatic spinal cord injury; surgical neurooncology

**Hobson, H. Phil** – upper respiratory system; reconstructive surgery; urogenital surgery

**Hoppes, Sharman M.** – avian and exotic analgesia; proventricular dilation disease; aflatoxins in birds

**Howe, Lisa M.** – upper respiratory disease; soft tissue surgery; prepubertal gonadectomy

**Hulse, Donald A.** – comparative orthopedics; biodegradable implants; biomechanics of fracture fixation

**Kerwin, Sharon C.** – bone grafting; osteoarthritis; biomechanics of fracture repair; feline orthopedics; spinal surgery

**Lees, George E.** – urinary tract diseases and renal pathology in companion animals; canine hereditary nephritis

**Levine, Jonathan M.** – neurology/neurosurgery; spinal cord injury; neuromuscular disease; intervertebral disk herniation

**Loria Lepiz, Mauricio** – anesthesiology; cardiovascular & respiratory physiology; monitoring technology - anesthesia and critical care

**Martinez, Elizabeth A.** – anesthesiology; cardiopulmonary physiology; neuromuscular blocking agents

**Matthews, Nora S.** – anesthesiology; analgesics; equine cardiovascular physiology; donkeys and mules

**Miller, Matthew W.** – cardiology; cardiomyopathies; interventional catheterization; vascular stenting; ventricular assist devices; catheter based therapy of vascular malformations; hemorrhagic shock
Nelson, David A. – cardiothoracic surgery; thoracoscopic surgery; cardiopulmonary bypass; cardiovascular assist device development; effects of time varying electromagnetic fields on bone healing; anti-coagulation therapy

Patterson, Adam P. – dermatology; allergy; otitis

Peycke, Laura E. – soft-tissue surgery; gastrodilatative volvulus

Saunders, Ashley B. – arrhythmias; canine valvular heart disease; echocardiography; interventional cardiology

Saunders, W. Brian – joint replacement, arthroscopy, molecular aspects of osteoarthritis and fracture repair, cell-matrix interactions, MMPs

Smith, Brooke E. – Emergency/critical care medicine; internal medicine

Snyder, Katherine D. – feline medicine, gastroenterology, inflammatory cytokines

Suchodolski, Jan S. – comparative gastroenterology; intestinal microbial ecology; molecular microbiology

Steiner, Jörg M. – small animal and comparative gastroenterology as it relates to pathophysiology; diagnosis, and treatment of gastrointestinal disorders

Stickney, Mark J. – elective surgery; pain management; mammary cancer

Willard, Michael D. – gastroenterology; internal medicine; fiberoptic and rigid endoscopy

Wilson, Heather M. – oncology; identification of cancer stem cells; identification of neoplastic therapeutic targets; clinical trials and osteosarcoma

Zoran, Debra L. – nutrition; GI; feline medicine
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* College and Department are as defined in the Approved Course Inventory posted at [http://www.tamu.edu/oisp/course-reports/](http://www.tamu.edu/oisp/course-reports/)

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Texas A&M University
oisp.tamu.edu/cognos8
Sep 24, 2009
## History of Courses Taught
### Veterinary Medicine and Biomedical Sciences
#### 2005-06

Department: VIBS

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* College and Department are as defined in the Approved Course Inventory posted at [http://www.tamu.edu/oisp/course-reports/](http://www.tamu.edu/oisp/course-reports/)

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Texas A&M University

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Sep 24, 2009
### History of Courses Taught
#### Veterinary Medicine and Biomedical Sciences

*Department: VLCS*

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# Appendix XIV. History of Courses Taught Last 5 Years with Enrollments

## History of Courses Taught

**2005-06**

### Veterinary Medicine and Biomedical Sciences

**Department: VSCS**

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* College and Department are as defined in the Approved Course Inventory posted at http://www.tamu.edu/oisp/course-reports/

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Sep 24, 2009
## History of Courses Taught Last 5 Years with Enrollments

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Texas A&M University
# History of Courses Taught

## Veterinary Medicine and Biomedical Sciences

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* College and Department are as defined in the Approved Course Inventory posted at [http://www.tamu.edu/oisp/course-reports/](http://www.tamu.edu/oisp/course-reports/)

Prepared by Office of Institutional Studies and Planning
Texas A&M University

oisp.tamu.edu/cognos8
Sep 24, 2009
## History of Courses Taught
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#### Department: BCBP

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* College and Department are as defined in the Approved Course Inventory posted at [http://www.tamu.edu/oisp/course-reports/](http://www.tamu.edu/oisp/course-reports/)
* Prepared by Office of Institutional Studies and Planning
* Texas A&M University
* [oisp.tamu.edu/cognos8](http://oisp.tamu.edu/cognos8)
* Sep 24, 2009
## History of Courses Taught
### Veterinary Medicine and Biomedical Sciences
#### 2006-07

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*College and Department are as defined in the Approved Course Inventory posted at [http://www.tamu.edu/oisp/course-reports/](http://www.tamu.edu/oisp/course-reports/)*

Prepared by Office of Institutional Studies and Planning
Texas A&M University

151

Sep 24, 2009
## History of Courses Taught

### Veterinary Medicine and Biomedical Sciences

#### 2006-07

**Department: VIBS**

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**Department Total:** 76 sections, 647 enrollments, 74 sections, 539 enrollments, 47 sections, 132 enrollments, 197 total enrollments, 1,318 average enrollment.

* College and Department are as defined in the Approved Course Inventory posted at [http://www.tamu.edu/oisp/course-reports/](http://www.tamu.edu/oisp/course-reports/)

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Sep 24, 2009
### History of Courses Taught 2006-07

**Veterinary Medicine and Biomedical Sciences**

**Department: VLCS**

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Sep 24, 2009
### History of Courses Taught

**Veterinary Medicine and Biomedical Sciences**

**Department: VSCS**

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Sep 24, 2009
# History of Courses Taught 2006-07

### Veterinary Medicine and Biomedical Sciences

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Sep 24, 2009
### History of Courses Taught

#### Veterinary Medicine and Biomedical Sciences

**2006-07**

**Department:** VTPP

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## History of Courses Taught

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* College and Department are as defined in the Approved Course Inventory posted at http://www.tamu.edu/oisp/course-reports/

Prepared by Office of Institutional Studies and Planning

Texas A&M University

13

oisp.tamu.edu/cognos8

Sep 24, 2009
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* College and Department are as defined in the Approved Course Inventory posted at http://www.tamu.edu/oisp/course-reports/
### Appendix XIV. History of Courses Taught Last 5 Years with Enrollments

#### History of Courses Taught

**Veterinary Medicine and Biomedical Sciences**

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**Veterinary Medicine and Biomedical Sciences**

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# History of Courses Taught 2007-08

**Veterinary Medicine and Biomedical Sciences**  
Department: **VLCS**

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*College and Department are as defined in the Approved Course Inventory posted at http://www.tamu.edu/oisp/course-reports/

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Texas A&M University  
oisp.tamu.edu/cognos8  
Sep 21, 2009
## History of Courses Taught

### 2007-08

**Veterinary Medicine and Biomedical Sciences**

**Department: VSCS**

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* College and Department are as defined in the Approved Course Inventory posted at [http://www.tamu.edu/oisp/course-reports/](http://www.tamu.edu/oisp/course-reports/)

Prepared by Office of Institutional Studies and Planning

Texas A&M University
# History of Courses Taught Last 5 Years with Enrollments

## Veterinary Medicine and Biomedical Sciences

### 2007-08

#### Department: VTPB

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**Department Total**: 80 Sections, 733 Enrollment, 91 Sections, 607 Enrollment, 34 Sections, 34 Enrollment, 205 Sections, 120 Enrollment, Total Enrollment: 1,460

*College and Department are as defined in the Approved Course Inventory posted at [http://www.tamu.edu/oisp/course-reports/](http://www.tamu.edu/oisp/course-reports/)

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### History of Courses Taught
#### Veterinary Medicine and Biomedical Sciences

**Department: VTPP**

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### History of Courses Taught Last 5 Years with Enrollments

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Sep 21, 2009
### History of Courses Taught

#### Veterinary Medicine and Biomedical Sciences

**Department: CLVM**

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## Appendix XIV. History of Courses Taught Last 5 Years with Enrollments

### History of Courses Taught

#### Veterinary Medicine and Biomedical Sciences

**Department:** VIBS

#### 2008-09

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Texas A&M University

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Sep 21, 2009
### History of Courses Taught

**Veterinary Medicine and Biomedical Sciences**

**Department:** VLCS

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Texas A&M University
## History of Courses Taught

### 2008-09

**Veterinary Medicine and Biomedical Sciences**  
Department: **VSCS**

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*College and Department are as defined in the Approved Course Inventory posted at [http://www.tamu.edu/oisp/course-reports/](http://www.tamu.edu/oisp/course-reports/)*

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Texas A&M University  
160  
Sep 21, 2009
## History of Courses Taught
### Veterinary Medicine and Biomedical Sciences
#### 2008-09

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**Department Total:**

- Fall 2008: 71 Sections, Enrollment 695
- Spring 2009: 93 Sections, Enrollment 685
- Summer 2009: 39 Sections, Enrollment 213
- Total: 203 Sections, Enrollment 1,593

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*College and Department are as defined in the Approved Course Inventory posted at [http://www.tamu.edu/oisp/course-reports/](http://www.tamu.edu/oisp/course-reports/)
Prepared by Office of Institutional Studies and Planning
Texas A&M University

*oisp.tamu.edu/cognos8*  
*Sep 21, 2009*
## History of Courses Taught
### 2008-09

**Veterinary Medicine and Biomedical Sciences**

**Department: VTPP**

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*College and Department are as defined in the Approved Course Inventory posted at http://www.tamu.edu/oisp/course-reports/
Prepared by Office of Institutional Studies and Planning
Texas A&M University
oisp.tamu.edu/cognos8
Sep 21, 2009*
## History of Courses Taught
### Agriculture and Life Sciences
#### Department: BCBP

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- Fall 2008: 60.0
- Spring 2009: 9.0
- Summer 2009: 57.0
- Total: 13.0

*College and Department are as defined in the Approved Course Inventory posted at http://www.tamu.edu/oisp/course-reports/
Prepared by Office of Institutional Studies and Planning
Texas A&M University
oisp.tamu.edu/cognos8
Sep 21, 2009*
### History of Courses Taught 2008-09

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**Department Total**  
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* College and Department are as defined in the Approved Course Inventory posted at [http://www.tamu.edu/oisp/course-reports/](http://www.tamu.edu/oisp/course-reports/)

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Texas A&M University  
oisp.tamu.edu/cognos8  
Sep 21, 2009
## History of Courses Taught
### Veterinary Medicine and Biomedical Sciences

**Department: CLVM**

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* College and Department are as defined in the Approved Course Inventory posted at http://www.tamu.edu/oisp/course-reports/

Prepared by Office of Institutional Studies and Planning
Texas A&M University
# History of Courses Taught

**Veterinary Medicine and Biomedical Sciences**

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#### 2009-10

**Veterinary Medicine and Biomedical Sciences**  
Department: VLCS

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*College and Department are as defined in the Approved Course Inventory posted at [http://www.tamu.edu/oisp/course-reports/](http://www.tamu.edu/oisp/course-reports/)*

Prepared by Office of Institutional Studies and Planning  
Texas A&M University
### History of Courses Taught

**Veterinary Medicine and Biomedical Sciences**  
Department: VSCS

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*College and Department are as defined in the Approved Course Inventory posted at [http://www.tamu.edu/oisp/course-reports/](http://www.tamu.edu/oisp/course-reports/)

Prepared by Office of Institutional Studies and Planning  
Texas A&M University
### History of Courses Taught Last 5 Years with Enrollments

#### Veterinary Medicine and Biomedical Sciences

**Department: VTPB**

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Prepared by Office of Institutional Studies and Planning

Texas A&M University

OISP.TAMU.EDU/COGNOS8

Oct 12, 2010
# History of Courses Taught

## 2009-10

**Veterinary Medicine and Biomedical Sciences**

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Texas A&M University

oisp.tamu.edu/cognos8

Oct 12, 2010
## History of Courses Taught Last 5 Years with Enrollments

### Agriculture and Life Sciences

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* College and Department are as defined in the Approved Course Inventory posted at [http://www.tamu.edu/oisp/course-reports/](http://www.tamu.edu/oisp/course-reports/)

Prepared by Office of Institutional Studies and Planning

Texas A&M University

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oisp.tamu.edu/cognos8

Oct 12, 2010
## History of Courses Taught
### Agriculture and Life Sciences
#### 2009-10

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### Department Total
- **Fall 2009**: 202 Sections, 2,821 Enrollment
- **Spring 2010**: 210 Sections, 2,491 Enrollment
- **Summer 2010**: 94 Sections, 393 Enrollment
- **Total Sections**: 373
- **Total Enrollment**: 5,705
- **Average Enrollment**: 1,725

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*College and Department are as defined in the Approved Course Inventory posted at [http://www.tamu.edu/oisp/course-reports/](http://www.tamu.edu/oisp/course-reports/)
Prepared by Office of Institutional Studies and Planning
Texas A&M University

14 Oct, 2010
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Appendix XVI. Section 3 from Texas A&M University College of Veterinary Medicine & Biomedical Sciences Accreditation Self Study submitted to the American Veterinary Medical Association on September 9, 2008.

3. PHYSICAL FACILITIES AND EQUIPMENT

3.1 Major Functions of Facilities Used by the College

Physical Plant

The college currently has eight major buildings, plus a host of support and special activity structures. In addition, the Medical Sciences Library is connected to the college by a pedestrian tunnel underneath University Drive. The eight major buildings are:

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<td>1955</td>
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<td>1993</td>
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The first five major buildings are located in a row adjacent to University Drive. The Veterinary Medical Research Building is a multi-story, stand-alone building. The Large Animal Hospital, also stand-alone, is set back from University Drive. The Stevenson Companion Animal Center, privately funded, is a short distance west on University Drive from the Veterinary Medical Research Building. Veterinary Medical Park is a term used by the college to describe much of the remaining area of the college, wherein specialty research and animal care are conducted to further knowledge in veterinary medicine. There are approximately 200 acres in Veterinary Medical Park, with eight animal housing areas of approximately 38,529 square feet, and 180,549 square feet of support space. There are 500 acres assigned to the college at the Riverside Campus, 10 miles from the CVM.

Units housed within the major buildings are as follows:

- Former Teaching Hospital (Building 508)
  1. (part of) Department of Veterinary Integrative Biosciences
  2. Veterinary Medical Teaching Hospital Administration Offices
  3. Computer Network and Maintenance Support
  4. Biomedical Science Program Offices
  5. Auxiliary (Former) Necropsy Laboratory
  6. Clinical Research
  7. Small-Group Teaching
  9. Central Supply and Receiving (VMTH)
  10. Continuing Education/Public Relations
Veterinary Medical Sciences (Building 507)
1. Department of Veterinary Pathobiology Offices
2. (part of) Department of Veterinary Physiology and Pharmacology
3. (part of) Department of Veterinary Integrative Biosciences

Veterinary Medical Administration (Building 1026)
1. Veterinary Medical Administration (Dean’s Office)
2. (part of) Department of Veterinary Pathobiology
3. Department of Veterinary Integrative Biosciences Offices
4. Department of Veterinary Physiology and Pharmacology Offices
5. Veterinary Medicine Media Resources Offices
6. Image Analysis Laboratory

Veterinary Clinical Sciences (Building 1085)
1. Department of Small Animal Clinical Sciences Offices
2. Small Animal Hospital
3. Diagnostic Support Laboratories
4. Modular Research Laboratories
5. Clinical Pathology, Microbiology and Immunology

Large Animal Hospital (Building 1194)
1. Department of Large Animal Clinical Sciences Offices
2. Large animal medical and surgical wards.
3. Large Animal Isolation Building (#1186) is adjoining.

Veterinary Medical Research (Building 1197)
1. Consists of four stories, with space assigned by the dean to research programs, rather than to individual departments.
2. Space assignments attempt to further augment and strengthen interactions of faculty from various departments.

Equine Pavilion
1. Thirty (30) hospital stalls
2. Equine reproduction facility with breeding area and laboratories

Necropsy Facility
This facility consists of: refrigerated storage lockers; necropsy laboratory space; incinerator; two biodigesters (large and small capacity); office space for four staff, four pathologists and eight residents; chemical storage lockers; and a ventilated area for histopathology. A teaching wet-lab offers considerable space for demonstration of wet tissues. The facility has design problems that affect its usefulness; a campus review of problems is now in progress. Immediate attention is needed to address safety issues associated with slick floors and defective disposal equipment.

3.2 Area Map Indicating the Principal Facilities of the College

Please see Appendix IV. Most areas of the main campus are accessible by car within 10-15 minutes driving time, and walking time to most locations is less than 30 minutes.
3.3 Adequacy of Rooms and Areas, Including Lighting and Ventilation

a. Safety Measures
   • Security: Major college buildings have after-hours access by security card recognition. University Security Officers patrol the CVM complex after-hours, at considerable expense to the college.
   • Storage: Storage areas for documents are always in short supply, even with trying to maintain as much information on electronic media as practical.
   • Safety Protocols: Posted in required and other appropriate locations.

b. Classrooms: With college-provided funding, ECR (above) has upgraded the equipment in all major classrooms and has an aggressive program to ensure their maintenance. Room size is inadequate if class size is increased
   • Seminar Rooms: Seminar rooms are adequate.
   • Teaching Laboratories: The teaching laboratories in the college are generally adequate in quality, although some could use upgrading. The relatively new Biowaste Management Facility and its biodigester have overcome problems with the previous worn-out incinerator. However, repairs already are required in the new facility.

c. Computers: Using college and university funds and private donations, the college has made major advances in: improving computer classrooms, having an ongoing program to upgrade faculty workstations, and maintaining one of the largest computer networks on campus. A major upgrade of the computer network infrastructure equipment usually takes place (if funds are available) every 3-5 years.

d. Animal Facilities for Teaching and Research: In general, the college has adequate to excellent facilities to support clinical teaching animals. Facilities for animals in the basic sciences need improvement. Construction of an Equine Pavilion to provide additional horse stalls and an equine theriogenology laboratory has helped.

e. Research Laboratories: With the advent of additional faculty with research interests, all space in the research building is occupied. Completion of the veterinary research building addition is sorely needed; it has been 4 years since the building was authorized. The quality of college research space is generally adequate at this time, although some older laboratories would benefit by remodeling. The college has critical need for BSL-3 laboratory space to accommodate research with select infectious agents.

f. Administration: Adequate in most respects, but modest in size and utility. This area was renovated and occupied in 1985, and partially renovated again in 2007.
   • Office Space: Although more spacious offices and increased number of faculty offices would be well utilized, current office arrangements meet most departmental needs. The 52 new offices in the research addition are expected to meet college needs for some time.

g. Educational and Communications Resources (ECR): The ECR unit was formalized in the late 1990s. It consists of Veterinary Medicine Media Resources, Veterinary Medicine Computing Services, and Veterinary Medicine Instructional Design. The organization has moderate space,
but has dramatically increased the efficiency and effectiveness of support delivered to the college and its constituents.

- **Library**: The Medical Sciences Library does a good job and continues to serve the needs of the college well.

h. **Lockers**: There are sufficient lockers at this time for students in the professional curriculum. Additional space may be required if more stringent safety rules are implemented for teaching laboratories.

i. **Student Lounge Area**: In addition to the Critical Care Café (dining facility), a small student lounge has been established in Building 508, with much of the funds raised by the professional students.

### 3.4 Isolation Facilities

**Safety**

Isolation facilities in the Veterinary Medical Park (VMP) include separate pens and holding areas, as well as small stalls and cages that can be used and later sterilized. The Schubot Center provides specialized isolation housing for exotic birds. The Wildlife and Exotic Animal Center (WEAC) houses exotic animals, the Deer Pens house white-tail deer, and the Buffalo Pens offer specialized housing for American Bison, deer, and elk. The Veterinary Medical Research Building (VMRB) houses a BSL-3 Biohazard Containment Suite which consists of men and women shower/change ante-rooms, common equipment room, three research laboratories, specialized room with four containment cubicles for laboratory animals, and a large capacity pass-through autoclave. Nine BSL-3 isolation buildings are located in the VMP with the capacity to hold four adult cows each or equivalent numbers of other species of livestock or poultry.

The Large Animal Hospital has an adjacent free-standing isolation building for clinical cases requiring separation; seven separate stalls are managed under standardized isolation procedures. The Small Animal Hospital has a separate ward area for cases requiring isolation. At the university level and located immediately adjacent to the college, the Comparative Medicine Program (CMP) facility operates a BSL-3 containment facility currently undergoing renovation. BSL-3 space in the VMP, VMRB, and CMP has HEPA filtered exhaust air and the facilities operate under negative pressure. BSL-3 facilities operate in compliance with the U.S. Public Health Service, Centers for Disease Control guidelines and protocols of the 5th edition Biosafety in Microbiological and Biomedical Laboratories (BMBL) under the direction of a professionally certified Texas A&M University Biosafety Officer and Responsible Official.

**Security**

Facilities for animals associated with the CVM teaching and research programs are fitted with security measures specifically designed for each facility. The VMP operates daily as a card access restricted facility from 5:00 p.m. until 7:30 a.m. The VMRB Biocontainment Suite operates at all times with three levels of locks including proximity card locks and individual identification digital codes for each door. The entire CMP Facility and the CMP Support Facility operate at all times as controlled access/locked facilities. Faculty, staff, and students are trained and authorized by an approved Animal Use Protocol for access to the CMP main building and the VMRB BSL-3 Suite animal holding/animal procedural areas. All security protocols are reviewed and approved and operated under the responsibility of the
professionally accredited Texas A&M University Biosecurity Officer, the Assistant Chief of University Police.

Maintenance

Facilities maintenance is provided by the University Physical Plant (UPP), and custodial service for major buildings is provided by University Custodial Services (UCS). However, expenses beyond university maintenance are billed to departments/units requesting service or repairs. The college is not permitted to utilize non-university repair or construction services without first processing through UPP. Higher-level custodial and janitorial services required for the Veterinary Medical Teaching Hospital are supplemented by funds from the hospital operations budget.

3.5 Current Plans for Improvement

There are several current and long-range remodeling projects and additions planned for the physical plant of the college. The Veterinary Medical Research Building Addition, when totally completed, will add 26 badly needed research laboratories. The equine lameness arena will improve equine diagnostic capabilities. A proposed multiple species MRI/linear accelerator facility is winding its way through the university and system approval process, with design hopefully approved to begin shortly. The Phase III major renovation of the small animal hospital is in the planning process, and should move into design/construction soon. The college aspires to acquire some 40-plus acres and laboratories on Highway 47 (a short distance from the CVM) for a future reproduction center, if the purchase is approved by the System and Board of Regents.

Equipment

The university has an Environmental Health and Safety Department to assist with training in safety procedures as well as safety monitoring and solving problems. All personnel working in a laboratory environment are required to receive training under the Texas Hazard Communications Act. The college continues to upgrade equipment used in major teaching classrooms, including using frequent monitoring of the condition of the equipment by staff members. Equipment used in laboratories is upgraded in accordance with needs and as funds permit. Clinical equipment is provided by a combination of department, VMTH, and college resources. Total capital outlays for equipment and limited remodeling for FY 2007 were almost $3 million.

Recommendations

The college should continue to seek from the university and state a designated source of recurring funds of $1,000,000 per year for remodeling needs and equipment upgrades. For the immediate future, the college will continue to focus on upgrading facilities important to the DVM program.

A major investment (>40 million) must be made for BSL-3/BSL-3Ag laboratories if this college is to continue research with infectious organisms.