To: Dr. Diana Natalicio, President  
Dr. Richard Jarvis, Provost  

From: Dr. Robert Kirken, Chair, Department of Biological Sciences  

Date: 23 February 2010  

Subject: Proposal for a BS in Cellular and Molecular Biochemistry  

The Department of Biological Sciences is proposing the creation of a BS in Cellular and Molecular Biochemistry that meet the guidelines of the American Society for Biochemistry and Molecular Biology (ASBMB). ASBMB does not currently offer accreditation but is planning to in the future. The department will seek accreditation by ASBMB at a future date when that option is available.

Dr. Robert Kirken, Chair  
Department of Biological Sciences  
*This proposal has been reviewed and approved by the faculty in the Department of Biological Sciences*

Endorsed By:

Dr. Carl Lieb, Chair  
Undergraduate Curriculum Committee  
Dr. John Wiebe, President  
Faculty Senate  

Dr. Anny Morrobel-Sosa, Dean  
College of Science  
Dr. Richard Jarvis, Provost  

Dr. Diana Natalicio, President  

El Paso, Texas  
79968-0513  
(915) 747-5844  
FAX: (915) 747-5808
New Program Request Form for Bachelor’s and Master’s Degrees

Administrative Information

1. **Institution**: The University of Texas at El Paso (UTEP)

2. **Program Name** – Bachelor of Science Degree in Cellular and Molecular Biochemistry

3. **Proposed CIP Code**: 26.0205

4. **Brief Program Description**

   The Bachelor of Science in Cellular and Molecular Biochemistry is an innovative program that will provide students in the border region with the opportunity to receive intensive training in state-of-the-art techniques widely used in biomedical research, therefore providing them with the technical skills and knowledge required for high-skilled employment opportunities in the biomedical sciences. The courses incorporated into this program are divided into four areas including general education courses (45 credit hours), sciences core courses (25 credit hours), required biochemistry core courses (38 credit hours), and elective courses in specialized areas (12 credit hours). Various courses offered in the biochemistry core courses are unique to this program. These courses include a cellular biochemistry lab, a new biochemistry lecture course, and a seminar course focusing on advanced research techniques in biochemistry. The cellular and molecular biochemistry degree plan will differ from those degrees currently offered within the Department of Biological Sciences primarily through a focus on research theory and practice in biochemistry. Existing courses chosen for this degree plan are aimed at providing a broad general knowledge base in the biomedical sciences. The proposed new courses will focus on the research methodologies and the applications required to solve scientific problems relevant to human disease. It is important to point out that the proposed degree plan is designed in such a way that students will have the freedom and the background to choose majors in biology, microbiology, chemistry, or biochemistry after their first two years of study. In addition, students pursuing this degree option will be well prepared for the medical professions.

   Students in the BS in Cellular and Molecular Biochemistry program will interact closely with faculty members from the Departments of Biological Sciences and Chemistry, and will enjoy a training oriented toward the development of problem-solving skills and critical thinking, tightly intertwined with the development of practical laboratory skills. Students graduating from this program will have a thorough education in basic biology and chemistry, and an in-depth knowledge of molecular biology, cellular biology, and cellular and molecular biochemistry. At the practical level, students graduating from this program will have extensive knowledge of basic laboratory techniques, including preparation of reagents, solutions, and media for bacterial, cellular, and biochemical analyses, and will be competent in the most-extensively used techniques in the cellular, molecular, and biochemical laboratory environments, including protein and DNA purification and analysis.
methods, tissue culture, and recombinant DNA technologies. A degree in Cellular and Molecular Biochemistry will provide a sound preparation for graduate studies in biochemistry, molecular biology, cellular biology, cancer, infectious diseases, medicine, and other health-related fields, and provide the student with the technical and intellectual skills to pursue employment in areas related to biotechnology and biomedical research in the academic, pharmaceutical, and biotechnology industries.

5. **Administrative Unit** – The Department of Biological Sciences within the College of Science

6. **Proposed Implementation Date** – Spring 2011

7. **Contact Person**

Dr. Robert Kirken  
Professor and Chair  
Department of Biological Sciences  
E-mail: rkirken@utep.edu  
Phone: (915) 747-6886
Program Information

I. Need

A. Job Market Need

Short-term and long-term evidence of need:

Cellular and molecular biochemistry comprises a vast range of disciplines related to the analysis and understanding of the complex chemical reactions and metabolic events occurring within the cell, their interactions with the cellular and extracellular environments, and their regulation at the genetic level. Therefore, training in cellular and molecular biochemistry is modeled to provide students with the theoretical and technical expertise required for the discovery and synthesis of new pharmaceutical products, the development of novel biotechnologies applicable to human health, animal health, food production, and even bio-fuel production; and the application of current technologies to various biotechnological and biomedical areas.

The demand for more and better trained cellular and molecular biochemists is supported by the projected increase in demand for scientific personnel in the U.S. According to the most recent Occupational Outlook Handbook (from the Bureau of Labor Statistics at the U.S. Department of Labor), for the 2008-18 period, jobs in scientific, and technical consulting services are anticipated to expand at a staggering 83 percent, a growth spurred by businesses’ continued need for advice on planning and logistics, the implementation of new technologies, and compliance with workplace safety, environmental, and employment regulations. According to the same source and for the same time period, employment specifically in life science occupations will increase rapidly as developments from biotechnology research continue to be used to create new medical technologies, treatments, and pharmaceuticals. Biochemists and biophysicists were selected as the 8th fastest growing occupation in the U.S., with a 37% change, 8,700 new jobs, with median annual wages of $82,840.

In spite of the expected increase in demand for cellular and molecular biochemists, there are currently only two universities in Texas that offer a nationally accredited BS program in biochemistry: Texas Tech University Health Sciences Center in Lubbock, TX; and The University of Texas Anderson Cancer Center, in Houston, TX, and neither of them offers the broader and more applicable training provided by a program in cellular and molecular biochemistry. Nationwide, according to Peterson’s (a Nelnet Company, Lawrenceville, NJ) there are 192 accredited programs in biochemistry. Most of them are focused on biochemistry and biophysics and very few provide simultaneous training in cellular and molecular biochemistry.

For the El Paso region, New Mexico State University (NMSU) is the only institution within a 300 mile radius that currently offers a BS in Biochemistry. The program offered at NMSU is managed by the Department of Chemistry and Biochemistry, and it contains a heavy

load of chemistry courses and a very light load of courses in cellular and molecular biology. We consider that the proposed program in cellular and molecular biochemistry has a broader focus that better reflects current employment needs and better adheres to the current guidelines of the American Society for Biochemistry and Molecular Biology. In fact, the proposed BS program in Cellular and Molecular Biochemistry at UTEP is part of a strategic response by the University to serve our students and the border region with programs that provide both academic and highly-skilled employment opportunities in disciplines with very high demand.

According to Bioentrepreneur (Nature Publishing Group), the current economic climate is prompting US biotechnology companies to relocate their facilities in smaller cities rather than in the large traditional biotech hubs. This presents a unique opportunity to the El Paso region to attract the moving biotechnology industry to the area. However, one of the important considerations driving companies’ choice of location is the presence of a highly skilled and trained workforce in the local area. The creation of the proposed program will help provide the conditions to attract biotechnology companies to the El Paso region, an outcome that would spur the socioeconomic development of the area.

Specific job opportunities for BS in Cellular and Molecular Biochemistry majors at local, state, regional, and national levels include the following:

**Occupational Titles**

- Research Associate, Biotechnology
- Chemist
- Clinical Laboratory Scientist
- Research Specialist
- Research Scientist, Biotechnology
- Research Scientist
- Research Laboratory Technician

**Industry Employers**

**Private Sector**
- Biotechnology
- Food and Drink (includes brewing)
- Health and Beauty Care
- Medical Instrument Companies
- Chemical Manufacturing Companies
- Research Companies and Laboratories

**Public Sector**
- Scientific Laboratories
- Agriculture and Fisheries
- Hospitals
- Universities
- Public Health Entities
- Blood Service
- Forensic Science
- Public Health Laboratories
- Cancer Research Institutes
- Environmental Pollution Control

Besides the job opportunities available for majors in cellular and molecular biochemistry, the proposed program will also provide students with a solid preparation for graduate studies in
biochemistry, molecular biology, cellular biology, cancer, infectious diseases, medicine, and other health-related fields.

B. Student Demand

One of the major goals of UTEP is to provide service to its local population, mainly Hispanic, and at the same time to offer an excellent academic and competitive research program. It is estimated that the El Paso region is the largest binational metropolitan area with more than two million people, predominantly Hispanic. In addition, the Hispanic population is one of the largest growing communities in the United States, and represents one of the fastest growing labor forces (US Department of Labor, Bureau of Labor Statistics).

Given that the student population at UTEP is more than 70% Hispanic, the proposed cellular and molecular biochemistry degree will have a great impact on the education and future workforce of these UTEP students. The proposed program is designed to prepare the scientists with an advanced understanding of the biochemical and molecular mechanisms underlying both normal cellular processes and disease states in humans. This knowledge can be translated into products that benefit human health, agriculture, and consumers. Thus, this program will provide these students with several possibilities of employment in different biomedical-related disciplines, as described above.

During the past five years a large number of students have inquired about a degree in biochemistry. As a result, the faculty in the Department of Biological Sciences conducted a survey of undergraduate freshman students in the College of Science. Of the 252 students surveyed, 52% would have chosen this degree. Of the 252 students, 56% were females and 71% were Hispanics. It is important to note that students enrolled in the proposed cellular and molecular biochemistry program will interact with students from other majors such as microbiology, biological sciences, and chemistry providing an attractive scientific environment.

It is anticipated that a large number of pre-med students will be interested in a degree in cellular and molecular biochemistry. Given that a large majority of pre-med majors are currently in the Department of Biological Sciences, it is anticipated that a majority of students choosing a degree in cellular and molecular biochemistry will be those who would have chosen a degree within the Department of Biological Sciences. Thus, we do not foresee that a new degree in cellular and molecular biochemistry will significantly reduce the number of students choosing a degree within the Department of Chemistry. The proposed degree will likely reduce the number of students choosing a degree in biological sciences and microbiology. However, given the large number of majors in these two programs, they will not be negatively impacted by a redistribution of majors within the department.
C. Enrollment Projections

Based on the results from the survey and the initial enrollment capacity of Molecular and Cellular Biochemistry degree, we estimated an initial enrollment of 50 students. The projected annual increase of students in the program is based on the net annual student increase (8.1%) and the interest in the program from students in other majors.

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II. Quality
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<td>Biochemistry Courses</td>
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<td>Public Speaking or Business/Profession Comm</td>
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<td>History of U.S. Since 1865</td>
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<td>POLS 2310</td>
<td>Introduction to Politics</td>
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<td>Seminar/Critical Inquiry or Interdisciplinary Tech/Soc</td>
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<td><em>Social and Behavioral Sciences (Only 3 CSU)</em></td>
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<td>ANTH 1301</td>
<td>Intro-Phys Anth/Archeolog</td>
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<td>ANTH 1302</td>
<td>Intro-Cultural Anthropology</td>
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<td>ECON 2303</td>
<td>Principles of Economics</td>
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<td><em>Visual and Performing Arts (Only 3 CSU)</em></td>
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<td>Art Appreciation</td>
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<td>ARTH 1305</td>
<td>History of World Art I</td>
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<td>ARTH 1306</td>
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<td>Introduction to Theatre</td>
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<td>CHEM 2324</td>
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<td>CHEM 2124</td>
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<td>CHEM 2325</td>
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<td>CHEM 2125</td>
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<td>CHEM 4330</td>
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<td>CHEM 4332</td>
<td>Biochemistry: Dynamics and Information</td>
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<td>MATH 1312</td>
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<td>BIOL 1305</td>
<td>General Biology</td>
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<td>BIOL 1107</td>
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<td>MICR 2440</td>
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<td>BIOL 3320</td>
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<td>BIOL 3414</td>
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<td>*CBCH 3316</td>
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<td>Cellular Biochemistry</td>
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<td>*CBCH 4310</td>
<td>Techniques in Molecular Biochemistry</td>
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<td>*CBCH 4320</td>
<td>Advanced Topics in Biochemistry</td>
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**Prescribed Elective Courses (12 SCH)**

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<td>BIOL 4198</td>
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<td>BIOL 4298</td>
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<td>BIOL 4398</td>
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<td>MICR 3443</td>
<td>Pathogenic Microbiology</td>
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<td>BIOL 4223</td>
<td>Transmission Electron Microscopy</td>
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<tr>
<td>BIOL 4322</td>
<td>Biological Ultrastructure Interpretation</td>
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<td>*CBCH 4330</td>
<td>Mechanisms of Cellular Toxicology</td>
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<td>BIOL 4388</td>
<td>Mammalian Physiology</td>
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<td>MICR 4351</td>
<td>General Virology</td>
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<td>MICR 4355</td>
<td>Medical Mycology</td>
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<td>ZOOL 4384</td>
<td>Neurobiology</td>
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<td>CHEM 4176</td>
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<td>CHEM 4376</td>
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G. Faculty

It should be noted that no new faculty hires are being requested to support the Bachelor of Science in Cellular and Molecular Biochemistry. All new courses will be developed and taught by existing faculty. In some cases (CBCH 3316, CBCH 4330) the courses are already offered at the graduate level. Thus, these faculty members will offer an undergraduate version of their graduate course and alternate between the graduate and undergraduate versions every semester. The Cellular Biochemistry Lab (CBCH 3414), the Techniques in Molecular Biochemistry lecture (CBCH 4310), and the Advanced Topics in Molecular Biochemistry seminar (CBCH 4320) are all focused on current research methodologies and are well suited for a team teaching approach. The faculty expertise within the Department of Biological Sciences is diverse and each individual faculty member involved in the implementation of these courses will have unique expertise to contribute to the success of the courses. Thus, these courses will be team taught by eight to ten individual faculty members with one faculty member serving as the organizer and administrator for the course.

The degree requirements for cellular and molecular biochemistry were developed in conjunction with three faculty members in the Department of Chemistry. These faculty members are listed below with the biology faculty members. Apart from teaching the existing Biochemistry I and Biochemistry II courses within the Department of Chemistry these faculty will be developing several new elective courses in support of the cellular and molecular biochemistry degree in the future. Those courses and their descriptions are listed above in section C. The CHEM 4334 and 4134 classes have already been offered by Dr. Bernal under the Bioinformatics designation (BINF 5341). This course will be relisted as a CHEM course. In addition, CHEM 4339 is an undergraduate version of an existing graduate course (CHEM 5339/6339). Thus, these courses will require no additional resources or faculty. CHEM 4333 will be a completely new course developed by Dr. Bernal and Dr. Xiao. These courses do not currently exist and will not be listed on the proposed catalogue copy. However, when developed at a future date they will be added to the list of electives for the cellular and molecular biochemistry degree.

<table>
<thead>
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<th>Name of Core Faculty and Faculty Rank</th>
<th>Highest Degree and Awarding Institution</th>
<th>Courses Assigned in Program</th>
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<td>Aguilera, Renato Professor Professor</td>
<td>Ph.D. in Immunology University of California at Berkeley</td>
<td>CBCH 3414 CBCH 4310</td>
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<td>Almeida, Igor C. Associate Professor</td>
<td>D.Sc. in Microbiology and Immunology Paulista School of Medicine</td>
<td>MICR 4453 CBCH 4320 CBCH 3414</td>
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<td>Cox, Marc Assistant Professor</td>
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<td>CBCH 3316, CBCH 4320, MICR 3445, CBCH 3414</td>
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<td>Ellzey, Joanne</td>
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<td>Garza, Kristine</td>
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<td>Gosselink, Kristin</td>
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<td>University of Colorado Health Sciences Center</td>
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<td>Sun, Jianjun</td>
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<td>New York University</td>
<td>CBCH 4320, CBCH 3414, BIOL 3414</td>
</tr>
<tr>
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<tr>
<td>Professor</td>
<td>Degree Details</td>
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<tr>
<td>Walsh, Elizabeth Professor</td>
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<td>CBCH 4310</td>
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<tr>
<td>Zhang, Jian Ying</td>
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<td>CBCH 4320</td>
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<tr>
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<td>CHEM 4176</td>
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<td>CHEM 4134</td>
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</tr>
<tr>
<td>Xiao, Chuan</td>
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<td>Narayan, Mahesh</td>
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</tr>
<tr>
<td></td>
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<td>CHEM 4330</td>
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</tr>
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</table>

H. Students

Given the demand for a degree option in Biochemistry it is anticipated that the cellular and molecular biochemistry degree will attract a large number of students. The core curriculum requirements are designed to meet a large majority of the requirements for all the Department of Biological Sciences' degree options. Thus, students have until the end of their sophomore year to declare a major in cellular and molecular biochemistry without repercussion. In addition, should a student decide to change his/her major to chemistry at the end of their sophomore year, depending upon the physics and organic chemistry options that were chosen by the student initially, only two courses in organic chemistry and physics may need to be taken to account for the difference. Students can also choose to place a heavier emphasis on either biology or chemistry through their choice of electives. In addition, in the spirit of interdisciplinary programs, entering students who have not yet decided whether to go the biology or chemistry route to biochemistry will be urged to enroll in the organic chemistry for majors courses.

Recruitment for the cellular and molecular biology degree will be done through new student orientations and advising as is the case with a majority of the undergraduate degree programs at UTEP. Those students with a strong desire to pursue a research career and/or display a strong aptitude for research will be encouraged to declare a major in cellular and molecular biochemistry. UTEP's mission, recruitment efforts, and admission policies have resulted in an undergraduate student body that directly mirrors the demographics of the region. Thus, recruitment within the pool of new applicants to the university will ensure the recruitment of underrepresented minorities into the cellular and molecular biochemistry major.
I. Library

The University of Texas at El Paso provides library services to support instructional and research needs for its students and faculty through the UTEP Library and its staff. The UTEP Library has developed a mission statement that parallels the statement of the institution. The Library provides innovative and high quality services, programs, and resources that support UTEP’s stated mission of education, research, scholarship, and community service. The Library provides access to a range of print and electronic information resources that meet the individual needs of its users in its multicultural university community and the U.S.-Mexico Border region.

The Library relies on several mechanisms to provide data and anecdotal information about its services to ensure the Library is supporting the programs and mission of the institution. Library services are used by both students and faculty and are recommended to students by faculty regularly throughout the academic year. The Biochemistry faculty can keep up to date on services and resources in meetings with Robert Klapthor, the subject specialist librarian for biology and chemistry. The Library uses Student Satisfaction Surveys annually to assist in analyzing services and resources and to measure satisfaction. Traditional suggestion boxes provide anecdotal data and queries, proposals, etc., on an ongoing basis and are used by the Library staff to identify issues to be addressed.

The building provides areas for both group and quiet study. Reference Librarians are available throughout the building but are most apparent at the Reference Desk which is adjacent to the Reference Collection and the Collaborative Learning Center. The CLC offers more than 300 computers and several printing stations for patrons. The majority of the reference tools and more than 97% of the journal collections are available online. Some of the major databases related to this program are Biological Abstracts, Science Direct, BioOne, EMBASE, Nature and Nature Reviews, PubMed, SciFinder (Chemical Abstracts online), and ISI Web of Science.

Print journals and newspapers are available on the same floor (2nd floor). Government Documents and Media are shelved on the 1st floor and additional computers are also available in the Microforms and Media area. Special Collections are on the 6th floor and include primary documents on El Paso and the U.S.-Mexico Border region.

The collections are enhanced continuously to support all of the academic programs the university offers. New materials are added each year through reviews of new publications in all fields. Robert Klapthor works closely with the science faculty to select the best resources.

The current collection development activities at the University Library support degrees in the areas related to the proposed Molecular and Cellular Biochemistry program, most notably supporting PhD programs in both Biology and Chemistry.

Access to government documents is provided by our status as a federal partial depository library. Federal documents are also provided by Lexis Nexis databases. The collection contains federal, state, and city resources. All of these are available in multiple formats.
Librarians are available to faculty and students to provide information literacy training and demonstrate the use of traditional and electronic resources. The Science Librarian Robert Klapthor has an M.S. in Chemistry, and works with the faculty to provide specialized instruction in using the various science databases. Three classrooms in the Library are used to teach the best use of the Library and its resources to patrons involved in the science programs. Sessions are held during regular class schedules or may be planned for longer periods at times more convenient to students.

Expenditures in fiscal year 2008-09 for the resources used by the biology and chemistry departments totaled $52,641 to cover monographs and media, $202,375 for subscriptions, and $962,270 for electronic databases. Library materials funding is totally supported by mandatory Library Fees. Expected growth of total student credit hours and increases in Library Fees should allow us to fully support the proposed BS in Biochemistry program. There are no plans to change the current approval plan or other purchasing practices as they meet the needs of the program.

J. Facilities and Equipment

All existing lecture halls, classrooms, and instructional laboratories meet the needs of the proposed program. The cost of the added Cellular Biochemistry laboratory course will be included in the UTEP HHMI Development of Curricular and Team Research in Biomedicine Program's list of required laboratory courses and will be included in the HHMI grant renewal. Thus, no additional funds are necessary nor requested for the facilities and equipment to support the Bachelor of Science degree in Cellular and Molecular Biochemistry.

K. Accreditation

The cellular and molecular biochemistry degree plan is not designed to meet the American Chemical Society's requirements for accreditation. The ACS requirements place heavy emphasis on physical chemistry. It is important to note that the proposed degree will not be called biochemistry, but cellular and molecular biochemistry. As the name implies, this degree option will place a heavier emphasis on cellular and molecular biology than a typical biochemistry degree plan. A more balanced degree plan with equal emphasis on cellular biology, molecular biology, and chemistry will better prepare students for careers in industry (e.g. biopharmaceutical companies) and academic research. The degree plan follows the guidelines suggested by the Society for Biochemistry and Molecular Biology. When this society offers accreditation, UTEP will apply for the accreditation.
**Costs and Funding**

**Five-Year Costs and Funding Sources**

<table>
<thead>
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<th>Five-Year Costs</th>
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<td>Personnel¹</td>
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<tr>
<td>Graduate Support²</td>
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<td>Facilities³</td>
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<td>Equipment⁴</td>
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<td>Other</td>
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<tr>
<td><strong>Total Costs</strong></td>
<td><strong>$597,295</strong></td>
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</tbody>
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¹ Personnel expenses are limited to a part-time clerical staff position during years 1 and 2, and a full-time clerical position during years 3, 4, and 5. This clerical staff will be needed to provide support to current departmental staff. The amount presented was calculated using and estimated annual rate of $35,000 (full time). No start-up packages are contemplated as no new faculty hires are being projected at this time.

² Graduate support is being requested to provide for 1, 2, and 3 additional teaching assistant positions during years 3, 4, and 5, respectively. These additional teaching assistants will be required for the new laboratories to be offered under the new program.

³ The value presented indicates the estimated cost of remodeling one of the current laboratories to set it up for the laboratory section of the “Techniques in Molecular Biochemistry” course.

⁴ The value presented indicates the estimated cost of the equipment needed to set up the laboratory section for the “Techniques in Molecular Biochemistry” course.

⁵ The value presented indicates the estimated cost for 3-4 additional journal subscriptions.

⁶ Formula funding was calculated at (FTSE)*$30SCH per year)*(59.02)*(Biennium Rate)-(Statutory Tuition). The full-time student enrollment matches previous projections in this document. The Biennium rate in year one is 1.00; 1.77 in a student’s year two; and 2.93 in a student’s years three and four.

⁷ State and designated tuition funding was calculated at [39 (differential tuition) + 101.92 (designated tuition) + 50 (Statutory Tuition)]* 30 SCH times the expected number of students. Formula funding is calculated at 58*30SCH*(number of new students starting in year 3)
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<th>Cost Category</th>
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<th>2nd Year</th>
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<td>$308,728</td>
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</table>
Signature Page

(8) Adequacy of Funding – The chief executive officer shall sign the following statement:

I certify that the institution has adequate funds to cover the costs of the new program. Furthermore, the new program will not reduce the effectiveness or quality of existing programs at the institution.

_________________________________________  __________________________
Chief Executive Officer                        Date

2. Board of Regents or Designee Approval – A member of the Board of Regents or designee shall sign the following statement:

On behalf of the Board of Regents, I approve the program.

_________________________________________  __________________________
Board of Regents (Designee)                    Date of Approval

3. Board of Regents Certification of Criteria for Commissioner of Assistant Commissioner Approval – For a program to be approved by the Commissioner or the Assistant Commissioner for Academic Affairs and Research, the Board of Regents or designee must certify that the new program meets the eight criteria under TAC Section 5.50 (b): The criteria stipulate that the program shall:

(1) be within the institution’s current Table of Programs;
(2) have a curriculum, faculty, resources, support services, and other components of a degree program that are comparable to those of high quality programs in the same or similar disciplines at other institutions;
(3) have sufficient clinical or in-service sites, if applicable, to support the program;
(4) be consistent with the standards of the Commission of Colleges of the Southern Association of Colleges and Schools and, if applicable, with the standards or discipline-specific accrediting agencies and licensing agencies;
(5) attract students on a long-term basis and produce graduates who would have opportunities for employment; or the program is appropriate for the development of a well-rounded array of basic baccalaureate degree programs at the institution;
(6) not unnecessarily duplicate existing programs at other institutions;
(7) not be dependent on future Special Item funding;
(8) have new five-year costs that would not exceed $2 million.

On behalf of the Board of Regents, I certify that the new program meets the criteria specified under TAC Section 5.50 (b).

_________________________________________  __________________________
Board of Regents (Designee)                    Date
APPENDIX A

Proposed Catalogue Copy and Degree Plan

BS in Cellular and Molecular Biochemistry

The requirements for the BS degree in Cellular and Molecular Biochemistry consist of the general College of Science requirements plus the following specific requirements:

**Major:** (a minimum of 51 semester hours including 40 semester hours of upper division coursework): BIOL 1305-1107, MICR 2440, BIOL 3320, BIOL 3414, MICR 3449, MICR 4453, CBCH 3316, CBCH 3414, CBCH 4310, and CBCH 4320, plus 10 semester hours chosen from BIOL 4192, BIOL 3330, MICR 3443, MICR 3445, BIOL 4223, BIOL 4322, CBCH 4330, BIOL 4388, MICR 4351, MICR 4355, ZOOL4384, CHEM 4176, CHEM 4376.

**Additional Science Course Requirements:** CHEM 1305-1105, CHEM. 1306-1106, CHEM. 2324-2124, CHEM 2325-2125, CHEM 4330, MATH 1411, MATH 1312, PHYS 1403, PHYS 1404
Cellular Biochemistry (CBCH)

3316 Membrane Biology (3-0)
Prerequisites: BIOL 3414 and CHEM 2325.

3414 Cellular Biochemistry (3-3)
Cellular aspects of biochemical pathways, protein sorting and transport, post-translational modifications of proteins, subcellular structures, cytoskeleton and cell movement, Endocytosis, phagocytosis, protein and lipid trafficking, synthesis of glycoproteins, receptors and cell signaling, apoptosis and cancer.
Prerequisites: BIOL 3414 and CHEM 4330. Laboratory Fee required.

4310 Techniques in Molecular Biochemistry (3-0)
An overview of research methods and techniques in biochemistry.
Prerequisite: CHEM 4330, CBCH 3414 or instructor approval.

4320 Advanced Topics in Molecular Biochemistry
A seminar course covering recent topics in biochemistry and molecular biology. Students will have the opportunity to learn about current research projects in biochemistry from a variety of faculty at UTEP as well as from scientists at other institutions.
Prerequisites: CHEM 4332, CBCH 3414 or instructor approval.

4330 Mechanisms of Cellular Toxicity (3-0)
Metabolic pathways, xenobiotics and cellular mechanisms of toxicity.
Prerequisites: BIOL 3414 and CHEM 4330.
# Bachelor of Science Degree Plan

**Cellular and Molecular Biochemistry**

(120 credit hours)

## REQUIREMENTS

### Part A: General Education

- **Subjects Required:**
  - ENGL 1311, ENGL 1312 or ENGL 1313
  - COMM 1301 or 1302
  - MATH 1411, MATH 1312 or STAT 2480

### Part B: Major: Biochemistry

- **Subjects Required:**
  - BIOL 1305-1107
  - MATH 2440
  - BIOL 3302
  - BIOL 3414
  - CBCH 3316 (new)
  - MICR 3449
  - MCR 4453
  - MCR 3445
  - CBCH 3414 (new)
  - CBCH 4310 (new)
  - CBCH 4320 (new)

### Part C: Required Chemistry Courses

- **Subjects Required:**
  - CHEM 1305-1105
  - CHEM 1306-1106
  - CHEM 2324-2124 - Fall
  - CHEM 2325-2125 - Spring
  - CHEM 4390-4191 - Fall
  - CHEM 4392 - Spring

### Part D: Electives

- **Subjects Required:**
  - BIOL 3300, 4300, 4398, MCR 3443
  - BIOL 4223, BIOL 4222, CBCH 4330
  - MCR 4551, MCR 4555, ZOOL 4381
  - BIOL 4292, BIOL 4198, 4298, BIOL 4398
  - CHEM 4176 (new), CHEM 4178 (new)

### Additional Requirements

- **Electives:** 8 credit hours
- **Total Hours:** 120 credit hours

### Other Requirements

- **Lower Division Math Courses & Core Curriculum:**
  - 3.3 GPA in major, 3.3 overall GPA
- **Pre-Med Advising:** Mary Wells
- **Academic Advising:** All Faculty in Biology Department
- **Department Chair:** Dr. Robert Kirk
- **College of Science Academic Advisor:** Margie Gutierrez (915) 747-5536
- **Notes:**
  - 3.3 GPA in major, 3.3 overall GPA
  - Lower Division Math Courses & Core Curriculum

### Comments

Dr. Nancy Marcus, Associate Dean, College of Science
Appendix B: Program Description

The Bachelor of Science in Cellular and Molecular Biochemistry at UTEP has been developed in response to the large number of student inquiries over the past few years. Due to the interdisciplinary nature of modern biomedical sciences, it is anticipated that a degree in cellular and molecular biochemistry will better position students for careers in biomedical research. Thus, the cellular and molecular biochemistry degree has been designed to meet the modern demands of biomedical science and to cater specifically to those students interested in a biomedical research career. Students that complete the requirements for the Bachelor of Science in Cellular and Molecular Biochemistry will have broad training in biology, biochemistry, chemistry, and microbiology - both in theory and research methodologies. This degree plan is designed to place increased importance on laboratory research skills. Emphasis will be placed on both theory and practical applications in the cellular and molecular biochemistry core courses. In particular, a new required lecture course entitled *Techniques in Molecular Biochemistry* and a new cellular biochemistry laboratory course will be required, and several new elective courses will be offered by both the Department of Biological Sciences and the Department of Chemistry. All new courses associated with the cellular and molecular biology degree plan are listed below along with the course descriptions.
Appendix B

Course Add Forms
Syllabi for New Courses
Catalog Copies for New Courses
COURSE ADD FORM

Subject Prefix/#
CBCH 3316

Dept. Administrative Code _ _ _ _ CIP Code _ _ _ _ _ _ _ _ _ _

Title (29 characters; if more, list a short title): Membrane Biology

Description (600 characters):

Prerequisite Course(s): BIOL 3414 (Minimum C), CHEM 2325 (Minimum C)
(Circle if any can be taken concurrently; indicate minimum grade next to every listed prerequisite.)

Corequisite Course(s):

Other Prerequisite(s):
_____ Department Approval _____ Placement Test

Restriction(s):

Major ____ ____ ____ ____ ____ ____
Class (Fr/So/Jr/Sr) _______ Level (UG/GR) _______

Course Fee(s) (Attach a Cost Analysis/Justification form for fee.):
Name of Fee ____________________________ Amount of Fee _______

Number of Times Course Can Be Repeated for Credit (0-9): 0_

Grading Mode: __X__ Standard _____ Pass/Fail _____ Audit

Number of Contact Hours:
_____ Lecture Hours _____ Lab Hours _____ Other

Types of Instruction (Schedule Type): (Circle or “bold” all types of instruction which reflect how the course can be scheduled in Banner.):
A Lecture B Laboratory C Practicum D Seminar E Independent Study F Private Lesson H Thesis I Dissertation K Lecture/Lab Combined O Discussion or Review (Study Skills) P Specialized Instruction Q Student Teaching

Rationale: Required course for new Cellular and Molecular Biochemistry B.S. degree

Routing: _____Department Archives
_____College Dean
_____College Curricula Committee
_____UGCC or Graduate Council
Instructor: TBA
Time & Date: TBA
Location: TBA

Assessment of Course Objectives: A learning outcomes evaluation (self-assessment) will be handed out for you to complete at the same time that the course evaluation forms are completed.

Grading: Each examination is worth 20% of your final grade. The Final Exam is worth 40% of your final grade. Grading scale: A=90-100%; B=80-89%; C=70-79%; D=60-69%; F is <60%.

Make-up Policy: If you miss an exam or assignment you will be expected to make-up the missed assignment and/or exam no later than 1 week (7 days) from the date you return to class. Failure to do so will result in a grade of 0% for that assignment and/or exam.

Absence and Drop Policy: It is your responsibility to attend class regularly. If you have a serious illness or a legitimate excuse (includes military personnel called to active duty or training) for being out-of-town, make arrangements with me before you leave. TBA is the last day students may drop with an automatic “W”.

Academic Integrity Policy: UTEP’s policies regarding academic integrity apply in this course. Information on this policy can be found at http://academics.utep.edu/Default.aspx?tabid=23785

Civility Statement: Please be respectful of all students’ right to learn without disruptions. In line with this statement please make an active effort to keep the talking to a minimum during lectures and presentations. Also make an active effort to either turn cell phones off or turn them to vibrate mode prior to the start of class.

Disability Statement: If a student has or suspects he/she has a disability and needs an accommodation, he/she should contact the Disabled Student Services Office (DSSO) at 747-5148 or at <dss@utep.edu> or go to Room 106 Union East Building. The student is responsible for presenting to the instructor any DSS accommodation letters and instructions.
<table>
<thead>
<tr>
<th>TOPIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Membranes: Concept, historical sketch and the evolution of fluid</td>
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<tr>
<td>mosaic model</td>
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<tr>
<td>Lipid composition and structural organization</td>
</tr>
<tr>
<td>Biomembranes: Protein components and basic function</td>
</tr>
<tr>
<td>Transport across the membranes</td>
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<tr>
<td><strong>EXAM-1</strong></td>
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<tr>
<td>Organelles of the eukaryotic cell</td>
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<tr>
<td>Mechanism of cell communication: receptors and cell signaling</td>
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<tr>
<td>Receptors and response: Tyrosine kinases, Ras, PKC, MAP kinase,</td>
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<tr>
<td>Lipid kinases</td>
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<tr>
<td><strong>EXAM-2</strong></td>
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<tr>
<td>Cell signaling, G-protein coupled receptors and ion channels</td>
</tr>
<tr>
<td>Endocytosis, clathrin, caveolae, lipid rafts</td>
</tr>
<tr>
<td>Post-translational modification of proteins and membrane functions</td>
</tr>
<tr>
<td>Membrane and cancer</td>
</tr>
<tr>
<td><strong>EXAM-3</strong></td>
</tr>
<tr>
<td><strong>FINAL EXAM</strong></td>
</tr>
</tbody>
</table>
COURSE ADD FORM

Subject Prefix/#
CBCH 3414

Dept. Administrative Code _ _ _ CIP Code _ _ _ _ _ _

Title (29 characters; if more, list a short title): Cellular Biochemistry

Description (600 characters):
A Lecture/Laboratory course covering cellular aspects of biochemical pathways, protein sorting and transport, post-translational modifications of proteins, subcellular structures, cytoskeleton and cell movement, Endocytosis, phagocytosis, protein and lipid trafficking, synthesis of glycoproteins, receptors and cell signaling, apoptosis and cancer.

Prerequisite Course(s): BIOL 3414 (Minimum C), CHEM 4330 (Minimum C)
(Circle if any can be taken concurrently; indicate minimum grade next to every listed prerequisite.)

Corequisite Course(s): ________________________________

Other Prerequisite(s):
______ Department Approval ______ Placement Test

Restriction(s):
Major _______ _______ _______ _______ _______
Class (Fr/So/Jr/Sr) _______ Level (UG/GR) _______

Course Fee(s) (Attach a Cost Analysis/Justification form for fee.):
Name of Fee __________ Course Fee __________ Amount of Fee $30

Number of Times Course Can Be Repeated for Credit (0-9): 0

Grading Mode: X Standard ______ Pass/Fail ______ Audit

Number of Contact Hours:
_____3 Lecture Hours _____ 3 Lab Hours ______ Other

Types of Instruction (Schedule Type): (Circle or "bold" all types of instruction which reflect how the course can be scheduled in Banner.)
A Lecture H Thesis
B Laboratory I Dissertation
C Practicum K Lecture/Lab Combined
D Seminar O Discussion or Review (Study Skills)
E Independent Study P Specialized Instruction
F Private Lesson Q Student Teaching

Rationale: Required course for new Cellular and Molecular Biochemistry B.S. degree

Routing: ____Department Archives
____College Dean
____College Curricula Committee
____UGCC or Graduate Council
Fee Request Form
The University of Texas at El Paso
Cost Analysis/Justification for Student Fees
2006-2007 Fiscal Year

Name of Fee: ____________________________

For course fees indicate
Subject/Prefix/Number: CBCH 3414 (Cellular Biochemistry)

Department: ____________________________

Current Fee: __ NA ____
(Indicate per course, per credit hour, etc.)

Change _____ New __ X ____ Deletion _____

Projected Income (per semester):

Number of Students: _______ x Existing Fee: $______ = Income: $______

Number of Students: 100 ______ x Proposed Fee: $ 30 ____ = Income: $ 3000

Current Expenditures:
Supplies: $_________
Equipment: $_________
Wages: $_________
Other: $_________

Proposed Expenditures:
Supplies: $ 3000
Equipment: $ 0
Wages: $ 0
Other: $ 0

Explanation of the fee and reason for proposed change:
This is a new course that will serve as a major core requirement for the Cellular and Molecular Biochemistry BS degree. The course includes a 3 credit hour lecture and 1 credit hour lab combined. We anticipate 4 sections per semester with approximately 25 students per section. Thus a $30 fee will cover the cost of the laboratory supplies. The new lab will utilize teaching lab space that already exists and no new equipment will be needed.

(If additional space is needed you may attach a separate page)

Chair/Department Head Signature: ____________________________
Dean’s Signature: ____________________________

If document is not being forwarded through UGCC or Graduate Council with a Course Add Form, then send directly to the Provost for submission to the University Fee Committee.
CBCH 3414 – Cellular Biochemistry

Time & Date: TBA
Location: TBA
Instructors: Miller, Timothy
Rosas-Acosta, German
Miranda, Manuel
Das, Siddhartha
Llano, Manuel
Almeida, Igor
Aguilera, Renato
Roychowdhury, Sukla

Office Hours: TBA by instructor

Course Objectives
By the end of the course, a successful student should be able to:
1. Demonstrate a basic knowledge of the structure and function of the cell organelles, structure and function and trafficking of proteins, and lipids. To understand the bases of cancer and many other diseases
2. Use a variety of laboratory methods and basic practical skills to study cells, biomolecules and the cellular environment.
3. Demonstrate the ability to process and analyze data.

Textbook
Alberts, Bruce; Johnson, Alexander; Lewis, Julian; Raff, Martin; Roberts, Keith; Walter, Peter. Molecular Biology of the cell, Garland Science, 2007. (ISBN# 9780815341055) Required

EXAMINATION PROCEDURE

- There will be three exams during the semester.
- There will be a comprehensive Final Examination of all the information that we have covered in the class during the semester.
- In addition to the above, there will be several student presentations.
- In addition to the above, there will be some homework assignments.
- Attendance is required.

GRADING POLICY

<table>
<thead>
<tr>
<th>Grade</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>90-100</td>
</tr>
<tr>
<td>B</td>
<td>80-89</td>
</tr>
<tr>
<td>C</td>
<td>70-79</td>
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<tr>
<td>D</td>
<td>60-69</td>
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<tr>
<td>F</td>
<td>Below 60</td>
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</table>

GRADE DISTRIBUTION

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
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</thead>
<tbody>
<tr>
<td>Exams (4)</td>
<td>50%</td>
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<tr>
<td>Final Exam</td>
<td>25%</td>
</tr>
<tr>
<td>Student presentation</td>
<td>25%</td>
</tr>
</tbody>
</table>

Census Day: TBA
Course Drop Deadline: TBA
Thanksgiving: TBA
Final Exam: TBA

Academic Integrity Policy: UTEP’s policies regarding academic integrity apply in this course. Information on this policy can be found at http://academics.utep.edu/Default.aspx?tabid=23785

Civility Statement: Please be respectful of all students’ right to learn without disruptions. In line with this statement please make an active effort to keep the talking to a minimum during lectures and presentations. Also make an active effort to either turn cell phones off or turn them to vibrate mode prior to the start of class.
**Disability Statement:** If a student has or suspects he/she has a disability and needs an accommodation, he/she should contact the Disabled Student Services Office (DSSO) at 747-5148 or at <dss@utep.edu> or go to Room 106 Union East Building. The student is responsible for presenting to the instructor any DSS accommodation letters and instructions.

<table>
<thead>
<tr>
<th>TOPIC</th>
<th>Required Reading</th>
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<tbody>
<tr>
<td>Internal organization of the cell</td>
<td>Chapter 10</td>
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<tr>
<td>Post-translational modifications of proteins</td>
<td>Handout</td>
</tr>
<tr>
<td>Membrane structure</td>
<td>Chapter 11</td>
</tr>
<tr>
<td>Membrane transport of small molecules</td>
<td>Chapter 12</td>
</tr>
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<td><strong>EXAM-1</strong></td>
<td></td>
</tr>
<tr>
<td>Intracellular compartments and protein sorting</td>
<td>Chapter 13</td>
</tr>
<tr>
<td>Intracellular vesicular trafficking</td>
<td>Chapter 14, 15</td>
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<tr>
<td>Mechanism of cell communication: receptors and cell signaling</td>
<td>Chapter 16</td>
</tr>
<tr>
<td><strong>EXAM-2</strong></td>
<td></td>
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<tr>
<td>The cytoskeleton</td>
<td>Chapter 17</td>
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<tr>
<td>The cell cycle</td>
<td>Chapter 18</td>
</tr>
<tr>
<td>Apoptosis</td>
<td>Chapter 19</td>
</tr>
<tr>
<td>Cell Junctions, Cell Adhesion, and the Extracellular Matrix</td>
<td>Chapter 20</td>
</tr>
<tr>
<td><strong>EXAM-3</strong></td>
<td></td>
</tr>
<tr>
<td><strong>FINAL EXAM</strong></td>
<td></td>
</tr>
</tbody>
</table>
COURSE ADD FORM

Subject Prefix/#
CBCH 4310
Dept. Administrative Code _ _ _ CIP Code _ _ _ _ _ _ _ _ _

Title (29 characters; if more, list a short title): Techniques in Molecular Biochemistry

Description (600 characters):
An overview of research methods and techniques employed in all areas of Biochemistry.

Prerequisite Course(s): CHEM 4330 (minimum C), CBCH 3414 (minimum C).
(Circle if any can be taken concurrently; indicate minimum grade next to every listed prerequisite.)

Corequisite Course(s): ________________________________

Other Prerequisite(s):
_____ Department Approval _____ Placement Test

Restriction(s):
Major _____ _____ _____ _____ _____
Class (Fr/So/Jr/Sr) _____ Level (UG/GR) _____

Course Fee(s) (Attach a Cost Analysis/Justification form for fee.):
Name of Fee ___________________________ Amount of Fee _____

Number of Times Course Can Be Repeated for Credit (0-9): 0

Grading Mode: _____X_ Standard _____ Pass/Fail _____ Audit

Number of Contact Hours:
_____ Lecture Hours _____ Lab Hours _____ Other

Types of Instruction (Schedule Type): (Circle or “bold” all types of instruction which reflect how the course can be scheduled in Banner.):
A Lecture H Thesis
B Laboratory I Dissertation
C Practicum K Lecture/Lab Combined
D Seminar O Discussion or Review (Study Skills)
E Independent Study P Specialized Instruction
F Private Lesson Q Student Teaching

Rationale: Required course for new Cellular and Molecular Biochemistry B.S. degree

Routing: _____Department Archives
_____College Dean
_____College Curricula Committee
_____UGCC or Graduate Council
CBCH 4310 Techniques in Molecular Biochemistry (3-0)

A team-taught course aimed at providing an overview of research methods and techniques in modern molecular biology and molecular biochemistry laboratories.

**Prerequisites:** CHEM 4330, CBCH 3414 or instructor approval.

**Course organizer:** Dr. Germán Rosas-Acosta 747-5122; grosas3@utep.edu

**Participant faculty members:** Dr. Marc Cox, Dr. Manuel Miranda, Dr. Kyle Johnson, Dr. Rosa Maldonado, Dr. Igor Almeida, Dr. Jianjun Sun, Dr. Manuel Llano, Dr. Timothy Miller, Dr. Kristine Garza.

**Office Hours:** Biosciences 4.148, Hours immediately after class

**Time & Date:** TBA

**Location:** TBA

**Course Objectives:** At the completion of this course the students are expected to achieve the specific learning objectives enumerated below.

1. Understand the basic approaches used for the analysis and purification of the most important macromolecules and organelles of the eukaryolic cell.

2. Understand the principles underlying the approaches indicated above.

3. Be able to apply their knowledge of these techniques in the design of experimental procedures aimed at testing specific hypotheses.

**Assessment of Course Objectives:** A learning outcomes evaluation (self-assessment) will be handed out for you to complete at the same time that the course evaluation forms are completed.

**Textbook:** None. Topic-specific papers will be assigned by the instructor in charge of that specific topic as deemed necessary by each instructor.

**Course Activities/Assignments:**

**End-of-topic (EOT) quiz:** At the end of each specific topic covered in class, the instructor in charge will provide an in-class quiz or a take-home activity to evaluate the student's command of the topics covered on that specific topic. Although different instructors may choose to use a different type of quiz or take-home test, all end-of-topic quizzes will be assigned the same value toward the final grade of the course.

**Grading:** As indicated above, all end-of-topic quizzes will count equally toward the final grade. All instructors are required to evaluate their section with an end-of-topic quiz. The final grade will correspond to an average of the scores obtained by the student in all end-of-topic quizzes throughout the semester. No final exam will be administered.

Grading scale: A=90-100%; B=80-89%; C=70-79%; D=60-69%; F is <60%.

**Make-up Policy:** If you miss an end-of-topic quiz, your next end-of-topic quiz will count double toward your final grade. If you miss two consecutive end-of-topic quizzes and have no medical justification, you will get a grade of Zero (0) in the first end-of-topic quiz missed and your score in the next end-of-topic quiz will count double toward your final grade. Failure to take three consecutive end-of-topic quizzes due to a non-justifiable cause will result in an automatic final grade of F in the course.

**Absence and Drop Policy:** It is your responsibility to attend class regularly. If you have a serious illness or a legitimate excuse (includes military personnel called to active duty or training) for being out-of-town, make arrangements with me before you leave. TBA is the last day students may drop with an automatic "W".

**Academic Integrity Policy:** UTEP’s policies regarding academic integrity apply in this course. Information on this policy can be found at [http://academics.utep.edu/Default.aspx?tabid=23785](http://academics.utep.edu/Default.aspx?tabid=23785)

**Civility Statement:** Please be respectful of all students’ right to learn without disruptions. In line with this statement please make an active effort to keep the talking to a minimum during lectures and presentations. Also make an active effort to either turn cell phones off or turn them to vibrate mode prior to the start of class.

**Disability Statement:** If a student has or suspects he/she has a disability and needs an accommodation, he/she should contact the Disabled Student Services Office (DSSO) at 747-5148 or at <dss@utep.edu> or go to Room 106
Union East Building. The student is responsible for presenting to the instructor any DSS accommodation letters and instructions.

**Topics to be covered:**

<table>
<thead>
<tr>
<th>Topic</th>
<th>Subtopics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protein quantitation and sequencing</td>
<td>Protein quantification methods</td>
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<td></td>
<td>Classical protein sequencing methods</td>
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<td></td>
<td>Mass spectrometry methods for protein sequencing</td>
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<tr>
<td>Protein separation and analysis</td>
<td>Gel electrophoresis</td>
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<td></td>
<td>Chromatography</td>
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<td>Immunoblotting</td>
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<tr>
<td>Recombinant protein expression and purification</td>
<td>Protein expression systems – prokaryotic and eukaryotic vectors and hosts</td>
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<td></td>
<td>General principles of protein expression</td>
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<td></td>
<td>Recombinant protein purification</td>
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<td>Affinity chromatography</td>
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<td>Viral expression systems</td>
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<td>DNA purification and analysis</td>
<td>DNA separation methods</td>
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<td>Agarose gels</td>
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<td>Pulse field electrophoresis</td>
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<td>Chromatography</td>
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<td>DNA synthesis</td>
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<td>DNA sequencing</td>
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<td>DNA arrays</td>
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<tr>
<td>Recombinant DNA Techniques</td>
<td>Cloning vectors</td>
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<td>General cloning methods</td>
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<td>Restriction enzymes</td>
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<td>Cloning by recombination</td>
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<td>PCR</td>
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<td>Site directed mutagenesis</td>
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<td>RNAI</td>
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<td>Lipid isolation and analysis</td>
<td>Liquid chromatography</td>
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<td>Gas chromatography</td>
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<td>Solid phase chromatography</td>
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<tr>
<td></td>
<td>Mass Spectrometry methods</td>
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<tr>
<td>Carbohydrate isolation and analysis</td>
<td>Chemical methods</td>
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<tr>
<td></td>
<td>Chromatographic and electrophoretic methods</td>
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<tr>
<td></td>
<td>Mass Spectrometry methods</td>
</tr>
</tbody>
</table>
COURSE ADD FORM

Subject Prefix/#
CBCH 4320

Dept. Administrative Code _______ CIP Code _____________

Title (29 characters; if more, list a short title): Advanced Topics in Molecular Biochemistry

Description (600 characters):
A seminar class on recent topics in biochemistry and molecular biology. Students will have the opportunity to learn about current, cutting-edge research related to Cellular and Molecular Biochemistry from both faculty and visiting scientists.

Prerequisite Course(s): CBCH 3414 (Minimum C) and CHEM 4332 (Minimum C) 
(Circle if any can be taken concurrently; indicate minimum grade next to every listed prerequisite.)

Corequisite Course(s): 

Other Prerequisite(s):
_____ Department Approval     _____ Placement Test

Restriction(s):
Major     _____     _____     _____     _____     _____

Class (Fr/So/Jr/Sr)     _____     Level (UG/GR)     _____

Course Fee(s) (Attach a Cost Analysis/Justification form for fee.): Name of Fee     ______________________ Amount of Fee     _____

Number of Times Course Can Be Repeated for Credit (0-9):     _____0

Grading Mode:     _____X_____ Standard     _____X_____ Pass/Fail     _____ Audit

Number of Contact Hours:
     _____3_____ Lecture Hours     _____ Lab Hours     _____ Other

Types of Instruction (Schedule Type): (Circle or bold all types of instruction which reflect how the course can be scheduled in Banner.):
A Lecture     H Thesis
B Laboratory     I Dissertation
C Practicum     K Lecture/Lab Combined
D Seminar     O Discussion or Review (Study Skills)
E Independent Study     P Specialized Instruction
F Private Lesson     Q Student Teaching

Rationale: Required course for new Cellular and Molecular Biochemistry B.S. degree

Routing:     _____Department Archives
     _____College Dean
     _____College Curricula Committee
     _____UGCC or Graduate Council
CBCH 4320 Advanced Topics in Molecular Biochemistry (3-0)

A team-taught seminar class on recent topics in biochemistry and molecular biology.

Prerequisites: CHEM 4332, CBCH 3414 or instructor approval.

Course organizer: To be determined.
Participant faculty members: Dr. Marc Cox, Dr. Manuel Miranda, Dr. Kyle Johnson, Dr. Rosa Maldonado, Dr. Igor Almeida, Dr. Jianjun Sun, Dr. Manuel Llano, Dr. Timothy Miller, Dr. Kristine Garza, Dr. Siddharth Das, Dr. Renato Aguilera, Dr. Elizabeth Walsh.

Office Hours: Biosciences 4.148, Hours immediately after class
Time & Date: TBA
Location: TBA

Course Objectives: At the completion of this course the students are expected to achieve the specific learning objectives enumerated below.

1. Familiarize themselves with the most current research topics and issues in biochemistry and molecular biology.

2. Understand the relevance of those current research topics and issues.

Assessment of Course Objectives: A learning outcomes evaluation (self-assessment) will be handed out for you to complete at the same time that the course evaluation forms are completed.

Textbook: None. Topic-specific papers will be assigned by the instructor in charge of that specific topic as deemed necessary by each instructor.

Course Activities/Assignments:

Writing assignments: Two writing assignments will be provided throughout the course. Students will be expected to provide a brief review of one of the topics covered in class, clearly identifying the currently unsolved questions related to that topic, the approaches currently in use to address the issue, and its relevance for biomedical research.

Grading: Each writing assignment will contribute 40% of the final grade. The remaining 20% will be assigned based on student's class attendance and participation. Grading scale: A=90-100%; B=80-89%; C=70-79%; D=60-69%; F is <60%.

Make-up Policy: All students must comply with the two writing assignments. Deadline extensions will be considered on a per-case manner and will only be honored in the event of a justifiable cause. Failure to present a written assignment within the time allotted will result in a grade of Zero (0) in that written assignment.

Absence and Drop Policy: It is your responsibility to attend class regularly. If you have a serious illness or a legitimate excuse (includes military personnel called to active duty or training) for being out-of-town, make arrangements with me before you leave. TBA is the last day students may drop with an automatic "W".

Academic Integrity Policy: UTEP's policies regarding academic integrity apply in this course. Information on this policy can be found at [http://academics.utep.edu/Default.aspx?tabid=23785](http://academics.utep.edu/Default.aspx?tabid=23785)

Civility Statement: Please be respectful of all students' right to learn without disruptions. In line with this statement please make an active effort to keep the talking to a minimum during lectures and presentations. Also make an active effort to either turn cell phones off or turn them to vibrate mode prior to the start of class.

Disability Statement: If a student has or suspects he/she has a disability and needs an accommodation, he/she should contact the Disabled Student Services Office (DSSO) at 747-5148 or at <dss@utep.edu> or go to Room 106 Union East Building. The student is responsible for presenting to the instructor any DSS accommodation letters and instructions.

Topics to be covered: The participant faculty members will choose a topic related to their current research and area of expertise and will provide an extensive and in-depth review of that topic, emphasizing its relevance for human health and/or biomedical research.
COURSE ADD FORM

Subject Prefix/#
CBCH 4330
Dept. Administrative Code _ _ _ _ CIP Code _ _ _ _ _ _ _ _

Title (29 characters; if more, list a short title): ___ Mechanisms of Cellular Toxicology

Description (600 characters):
Metabolic pathways, xenobiotics and cellular mechanisms of toxicity

Prerequisite Course(s): ___ BIOL 3414 (Minimum C), CHEM 4330 (Minimum C)
(Circle if any can be taken concurrently; indicate minimum grade next to every listed prerequisite.)

Corequisite Course(s):

Other Prerequisite(s):
____ Department Approval _____ Placement Test

Restriction(s):
Major ____ ____ ____ ____ ____ ____
Class (Fr/So/Jr/Sr) ______ Level (UG/GR) _____

Course Fee(s) (Attach a Cost Analysis/Justification form for fee.):
Name of Fee ____________________________ Amount of Fee ______

Number of Times Course Can Be Repeated for Credit (0-9): ___ 0 ___

Grading Mode: ____ X ____ Standard _____ Pass/Fail _____ Audit

Number of Contact Hours:
____ 3 ___ Lecture Hours _____ Lab Hours _____ Other

Types of Instruction (Schedule Type): (Circle or “bold” all types of instruction which reflect how the course can be scheduled in Banner.):
A Lecture H Thesis
B Laboratory I Dissertation
C Practicum K Lecture/Lab Combined
D Seminar O Discussion or Review (Study Skills)
E Independent Study P Specialized Instruction
F Private Lesson Q Student Teaching

Rationale: A new elective course for the Cellular and Molecular Biochemistry BS degree that provides information on an important topic relevant for careers in the pharmaceutical industry.

Routing: _____Department Archives
_____College Dean
_____College Curricula Committee
_____UGCC or Graduate Council
CBCH 4330 - Mechanisms of Cellular Toxicity

Time & Date: TBA  Dr. Marc Cox  747-5429; mbcox@utep.edu
Location: TBA  Office Hours: Biosciences 3.128, Open Door

Course Objectives: This course is designed so that you will have an understanding of the following learning outcomes at the completion of the course.

1. Have a broad understanding of basic toxicological principles.
2. Understand how those basic principles apply to current issues of toxicological concern.
3. Understand how the exposure route, chemical properties of a toxicant, and the mechanism by which a toxicant acts can influence the ultimate toxic response(s) that result from exposure.

Assessment of Course Objectives: A learning outcomes evaluation (self-assessment) will be handed out for you to complete at the same time that the course evaluation forms are completed.


Course Activities/Assignments:

Active Learning Days: These class periods will involve in-class problem solving/case studies. These in class assignments are not graded (no pressure) and are meant to provide you with real life problems to which you can apply your newly acquired knowledge of Toxicology.

Grading: Each examination is worth 20% of your final grade. Weekly quizzes will be worth 20% of your final grade. Grading scale: A=90-100%; B=80-89%; C=70-79%; D=60-69%; F is <60%.

Make-up Policy: If you miss an exam or assignment you will be expected to make-up the missed assignment and/or exam no later than 1 week (7 days) from the date you return to class. Failure to do so will result in a grade of 0% for that assignment and/or exam.

Absence and Drop Policy: It is your responsibility to attend class regularly. If you have a serious illness or a legitimate excuse (includes military personnel called to active duty or training) for being out-of-town, make arrangements with me before you leave. TBA is the last day students may drop with an automatic “W”.

Academic Integrity Policy: UTEP’s policies regarding academic integrity apply in this course. Information on this policy can be found at http://academics.utep.edu/Default.aspx?tabid=23785

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<table>
<thead>
<tr>
<th>Topic</th>
<th>Reading</th>
</tr>
</thead>
<tbody>
<tr>
<td>History and Principles of Toxicology</td>
<td>Chapters 1-2</td>
</tr>
<tr>
<td>Dose-response</td>
<td>Chapter 2</td>
</tr>
<tr>
<td>General Mechanisms of Toxicity</td>
<td>Chapter 3</td>
</tr>
<tr>
<td>Risk Assessment</td>
<td>Chapter 4</td>
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<tr>
<td>Absorption</td>
<td>Chapter 5</td>
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<tr>
<td>Distribution and Excretion</td>
<td>Chapter 5</td>
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<td>Metabolism</td>
<td>Chapter 6</td>
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<tr>
<td>Toxicokinetics</td>
<td>Chapter 7</td>
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<tr>
<td>Active Learning - Problem Solving</td>
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</tr>
<tr>
<td><strong>EXAM #1</strong></td>
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</tr>
<tr>
<td>Chemical Carcinogenesis</td>
<td>Chapter 8</td>
</tr>
<tr>
<td>Mutagenesis - Genetic Toxicology</td>
<td>Chapter 9</td>
</tr>
<tr>
<td>Immune System Toxicity</td>
<td>Chapter 12</td>
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<tr>
<td>Liver Toxicity</td>
<td>Chapter 13</td>
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<tr>
<td>Kidney Toxicity</td>
<td>Chapter 14</td>
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<tr>
<td>Respiratory System Toxicity</td>
<td>Chapter 15</td>
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<tr>
<td>Nervous System Toxicity</td>
<td>Chapter 16</td>
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<td>Ocular and Visual System Toxicity</td>
<td>Chapter 17</td>
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<tr>
<td>Active Learning/Problem Solving</td>
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<tr>
<td><strong>EXAM #2</strong></td>
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<tr>
<td>Heart and Vascular System Toxicity</td>
<td>Chapter 18</td>
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<tr>
<td>Skin Toxicity</td>
<td>Chapter 19</td>
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<tr>
<td>Reproductive System Toxicity</td>
<td>Chapter 20</td>
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<td>Endocrine System Toxicity</td>
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<td>Blood Toxicity</td>
<td>Chapter 11</td>
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<td>Pesticides</td>
<td>Chapter 22</td>
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<td>Metals</td>
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<td>Solvents and Vapors</td>
<td>Chapter 24</td>
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<tr>
<td>Radiation</td>
<td>Chapter 25</td>
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<tr>
<td>Active Learning/Problem Solving/Review</td>
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<tr>
<td><strong>EXAM #3</strong></td>
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<tr>
<td><strong>FINAL EXAM</strong></td>
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</tr>
</tbody>
</table>
New Course Descriptions

CBCH 3414 Cellular Biochemistry (3-3)

Cellular aspects of biochemical pathways, protein sorting and transport, post-translational modifications of proteins, subcellular structures, cytoskeleton and cell movement, endocytosis, phagocytosis, protein and lipid trafficking, synthesis of glycoproteins, receptors and cell signaling, apoptosis and cancer. Prerequisites: BIOL 3414 and CHEM 4330. Laboratory fee required.

CBCH 3316 Membrane Biology (3-0)


CBCH 4330 Mechanisms of Cellular Toxicity (3-0)

Metabolic pathways, xenobiotics and cellular mechanisms of toxicity Prerequisites BIOL 3414 and CHEM 4330.

CBCH 4310 Techniques in Molecular Biochemistry (3-0)

An overview of research methods and techniques (team-taught) Prerequisites: CHEM 4330, CBCH 3414 or instructor approval.

CBCH 4320 Advanced Topics in Molecular Biochemistry (3-0)

A team-taught seminar class on recent topics in biochemistry and molecular biology. Prerequisites: CHEM 4332, CBCH 3414 or instructor approval.

Future Planned Course Descriptions

With collaboration of faculty from the Department of Biological Sciences and the Department of Chemistry, we anticipate that the courses listed here will be added to the list of electives for the BS in Cellular and Molecular Biochemistry in the future. The implementation of the current degree does not require these courses. If added, these courses will allow students to choose a stronger chemistry focus through their choice of electives.

CHEM 4333 Analysis and Modeling of Biological Structures (3-0)

The course provides students with advanced knowledge in modeling techniques that are commonly used to study molecular behaviors in high performance computer simulations.
Prerequisite: CHEM 4330 & computer programming skills in C, fortran, or other modern programming language.

**CHEM 4334 Introduction to Structural Biochemistry (3-0)**

This course provides a sophisticated examination of various aspects of bio-macromolecules from a structural point of view, focusing particularly but not exclusively on protein complexes. Contents of the course include the fundamental interpretation of different levels of biomolecular structure (primary to tertiary), structure and function relationships and three dimensional structure determination techniques such as x-ray crystallography, cryo-electron microscopy, and scanning electron microscopy.

Prerequisite: CHEM 4330

**CHEM 4134 Introduction to Structural Biochemistry Lab (0-1)**

The laboratory will reflect the topics covered in the lecture. Students will clone, express, purify and crystallize a protein for X-ray data collection and structure determination.

Prerequisite: CHEM 4330

**CHEM 4339 Topics in Protein Biophysics (3-0)**

Protein Biophysics from the current literature.

Prerequisite: CHEM 4330
Appendix C: Sample Course Schedule

Bachelor of Science in Cellular and Molecular Biochemistry

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Spring Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Freshman Year</strong></td>
<td><strong>Sophomore Year</strong></td>
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<tr>
<td>BIOL 1305-1106 4</td>
<td>MICR 2440 4</td>
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<tr>
<td>CHEM 1305-1105 4</td>
<td>CHEM 1306 3</td>
</tr>
<tr>
<td>MATH 1411 4</td>
<td>CHEM 1106 1</td>
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<tr>
<td>UNIV 1301 3</td>
<td>ENGL 0311 3</td>
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<tr>
<td>COMM 1301 3</td>
<td>HIST 1301 3</td>
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<td><strong>Total: 18</strong></td>
<td>MATH 1312 3</td>
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<tr>
<td></td>
<td><strong>Total: 17</strong></td>
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<tr>
<td>CHEM 2324 3</td>
<td>BIOL 3414 4</td>
</tr>
<tr>
<td>CHEM 2124 1</td>
<td>CHEM 2325 3</td>
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<tr>
<td>BIOL 3320 3</td>
<td>CHEM 2125 1</td>
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<tr>
<td>ENGL 1312 3</td>
<td>Core (Vis/PerfArts) 3</td>
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<tr>
<td>PHYS 1403 4</td>
<td>PHYS 1404 4</td>
</tr>
<tr>
<td>HIST 1302 3</td>
<td><strong>Total: 15</strong></td>
</tr>
<tr>
<td><strong>Total: 17</strong></td>
<td></td>
</tr>
</tbody>
</table>

| **Junior Year** | **Senior Year** |
| CHEM 4330-4131 4 | MICR 3449 4 |
| POLS 2310 3 | POLS 2311 3 |
| Core (Social/behav) 3 | CHEM 4332 3 |
| CBCH 3316 3 | Core (Humanities) 3 |
| **Total: 13** | **Total: 13** |

| | | |
| **Menu electives** 6 | CBCH 4310 3 | CBCH 4320 3 |
| **Total: 14** | Menu elective 6 | **Total: 12** |

Total credit hrs: **120**
Appendix D

Core Faculty CVs
Dr. Renato Aguilera
The University of Texas at El Paso
Biological Sciences
(915) 747-6852
Email: raguilera@utep.edu

Education

POSTD, University of California at Berkeley, 1989.
   Major: Immunology

Ph D, University of California at Berkeley, 1987.
   Major: Immunology

MS, University of Texas at El Paso, 1982.
   Major: Biology

BS, University of Texas at El Paso, 1981.
   Major: Microbiology

Professional Positions

Academic - Post-Secondary

Professor, Department of Biological Sciences, The University of Texas at El Paso. (2002 - Present).

Associate Professor, Department of Molecular, Cell and Developmental Biology, University of California Los Angeles. (1997 - 2002).

Assistant Professor, Department of Molecular, Cell and Developmental Biology, University of California Los Angeles. (1989 - 1997).

UC President's Postdoctoral Fellow, Department of Molecular and Cellular Biology, Div. of Immunology, University of California at Berkeley. (1987 - 1989).

Professional

Director, Cell Culture and High Throughput Screening (HTS) facility of the Border Biomedical Research Center, The University of Texas at El Paso. (2007 - Present).

Director, SCORE Program, The University of Texas at El Paso. (2005 - Present).

Director, RISE Scholars Program, The University of Texas at El Paso. (2004 - Present).

Director, Student Research Training Center, the University of Texas at El Paso. (2004 - Present).

Director, Graduate Program in Biology, the University of Texas at El Paso. (2002 - Present).

Chair of Minority Affairs Committee, American Society for Cell Biology. (December 10, 2009 - December 10, 2012).

Vice Chair of Minority Affairs Committee, American Society for Cell Biology. (January 1, 2009 - December 10, 2009).

Deputy Director, Border Biomedical Research Center, The University of Texas at El Paso. (2002 - 2005).

Director, Minority Access to Research Careers Programs (MARC U*STAR) at University of California Los Angeles. (1998 - 2002).

Member, Executive Committee of the Center for Academic and Research Excellence (CARE) at University of California Los Angeles. (1992 - 2002).

Employee, Molecular Biology Institute and Jonsson Comprehensive Cancer Center. (1990 - 2002).

Co-Director, Minority Access to Research Careers Programs (MARC U*STAR) at University of California Los Angeles. (1996 - 1997).

Member, Leadership Committee Jonsson Comprehensive Cancer Center. (1993 - 1997).


Ford Foundation Dissertation Fellow, Department of Immunology, University of California at Berkeley. (1986 - 1987).

National Science Foundation Pre-doctoral Fellow, Department of Immunology, University of California at Berkeley. (1982 - 1985).

Graduate Fellow, Department of Biology, University of Texas at El Paso. (1980 - 1982).

**Professional Memberships**

American Association for the Advancement of Science.

Member 2002-2009; Chair 2009 -, American Society of Cell Biology.

American Society of Microbiology.

Society for the Advancement of Chicanos and Native Americans in Science.

Society for the Advancement of Chicanos and Native Americans in Science.

**Awards and Honors**


Distinguished Faculty Teaching Award, College of Science, University of Texas at El Paso. (2007).


Recipient of UT STARS Award, UT STARS Award. (2006).


Faculty profile published, NIGMS Minority Programs Update. (1999).


Distinguished Faculty Teaching Award, Mol. Cell and Dev. Biology Department, University of California Los Angeles. (1995).


President's Postdoctoral Fellowship, University of California. (1987).

Disseration Fellowship, Ford Foundation. (1986).

Pre-Doctoral Fellowship, National Science Foundation. (1982).


**TEACHING**

**Teaching Experience**

The University of Texas at El Paso

BIOL 4198, Special Problems, 1 course.

BIOL 4398, Special Problems, 1 course.

BIOL 5302, Resrch Biological Science, 3 courses.

BIOL 5398, Thesis, 1 course.

BIOL 5399, Thesis, 3 courses.

BIOL 6310, Adv Research Techniques, 10 courses.

BIOL 6390, Independent Research, 1 course.

BIOL 6690, Independent Research, 1 course.

UNIV 1301, Seminar/Critical Inquiry (C), 6 courses.

**Directed Student Learning**

Master's Thesis Committee Member. (2008 - Present).

Advised: Blanca Ruiz
  Advised: David Barry

  Advised: Marcela Mendoza

  Advised: Olivia Molinar

Master's Thesis Committee Member. (2007 - Present).
  Advised: Brenda Anchondo

  Advised: Lizath Aguiniga

  Advised: Oscar Ramirez

Doctoral Advisory Committee Member. (2007 - 2009).
  Advised: Oscar Ramirez

  Advised: Chang-soo Seong

Other. (2002 - 2009).
  Advised: Armando Varela

  Advised: Gloria Anchondo

  Advised: Miguel Mata

Master's Thesis Committee Chair, "Generation and isolation of recombinant DNase II enzyme."
  (January 1, 2007).
  Advised: Adrian Alberto Mejia Lara

Master's Thesis Committee Member. (2004 - 2006).
  Advised: Michael Baranowski

RESEARCH

Published Intellectual Contributions

Refereed Journal Articles

Shaik, N., Martinez, A., Augustin, I., Giovinazzo, H., Varela-Ramirez, A., Sanau, M., Aguilera, R.,
  complexes and study of their interactions with biomolecular targets. *Inorg. Chem.*, 4(48),
  1577-1587.

Elie, B. T., Levine, C., Ubarretxena-Belandia, I., Varela-Ramirez, A., Aguilera, R., Ovalle, R.,
  Contel, M. Water-Soluble Phosphane-gold(I) Complexes. Applications as Recyclable Catalysts
  in a Three-Component Coupling Reaction and as Antimicrobial and Anticancer Agents.


**Journal Articles**


**Other**


**Contributed Presentations**


Anchondo, B. (Presenter & Author), Aguilera, R. (Author Only), Society for Advancement of Chicanos and Native Americans in Science (SACNAS) National Conference, "Cloning and


Contracts, Grants and Sponsored Research

Equipment

Aguilera, Renato (Principal), "ARRA SCORE SUPPLEMENT: SCORE PROGRAM AT THE UNIVERSITY OF TEXAS AT EL PASO (ADMINISTRATION)," Federal, $516,023.00. (October 1, 2009 - September 30, 2010).

Aguilera, Renato (Principal), Kirken, Robert A (Co-Principal), "Addition of Confocal Microscope to Cell Culture Core," State, $200,000.00. (January 27, 2009 - July 1, 2009).

Aguilera, Renato (Principal), Kirken, Robert A (Co-Principal), "Addition of Fluorescence Microscope to Cell Culture Core," The University of Texas at El Paso, $70,000.00. (January 1, 2009 - May 1, 2009).

Grant

Gosselink, Kristin (Supporting), Natalicio, Diana S (Principal), Kirken, Robert A (Supporting), Garza, Kristine M (Supporting), Aguilera, Renato (Supporting), Almeida, Igor C (Supporting), Johnson, Kyle L (Supporting), Das, Siddhartha (Supporting), Elzey, Joanne T (Supporting), Walsh, Elizabeth A (Supporting), Han, Kyung-An (Supporting), "Border Biomedical Research Center," Federal, $1,400,000.00. (June 1, 2009 - May 31, 2014).


Research

Aguilera, Renato (Principal), "CHARACTERIZATION OF TWO NOVEL DROSOPHILA NUCLEASES," Federal, $333,405.00. (September 1, 2009 - June 30, 2012).

Sponsored Research

Leung, Ming-Ying (Principal), Aguilera, Renato (Co-Principal), "The major goal of this project is to develop a set of open-source computational tools to accurately predict genome structures in RNA viruses using grid computing technology," Federal, $606,952.00. (September 1, 2007 - August 31, 2011).

Johnson, Kyle L (Co-Principal), Walker, David (Principal), Aguilera, Renato (Principal), Rosas-Acosta, German (Co-Principal), "Western Regional Center for Biodefense and Emerging Infectious Diseases Research (U54 AI057156). Subproject title: Development of Assays for Discovery of Novel Anti-Viral/Anti-Bacterial Compounds," Federal, $475,391.00. (September 2009 - May 2011).

Johnson, Kyle L (Principal), Aguilera, Renato (Principal), "MBRS-Score Program at the University of Texas at El Paso. Sub-project title: Nodavirus-based vaccines for West Nile virus," Federal, $200,000.00. (June 1, 2007 - May 31, 2011).

Supplement

Aguilera, Renato (Principal), "RISE SCHOLARS PROGRAM AT THE UNIVERSITY OF TEXAS AT EL PASO," Federal, $50,000.00. (April 1, 2009 - March 31, 2010).

Research in Progress

"High-throughput screening of a synthetic compound library for novel anti-influenza therapeutic agents" (On-Going)

The goal for this project is to identify novel compounds capable of inhibiting the activity of the influenza virus RNA polymerase. This viral enzyme is critical for influenza virus replication and exhibits substantial differences with the RNA polymerases normally present in the cell. Therefore, a compound able to inhibit the activity of this viral Polymerase may exert little or no toxicity on the cell and represent a valuable addition to our current battery of anti-influenza drugs.

We are in the final stages of developing a recombinant adenovirus construct that will allow us to execute high-throughput screenings of synthetic compound libraries looking for novel anti-influenza agents. The simple idea behind the screening is that all the cells in a confluent cellular population will fluoresce red upon transduction with the recombinant adenovirus. However, upon subsequent infection and multiplication of influenza virus, the cells will also fluoresce green, due to the production of a green fluorescent protein expressed under the control of the influenza virus RNA polymerase. Therefore, cells treated with an effective inhibitor against influenza that exerts no toxic effects on the cell will fluoresce red but not green; cells treated with a compound toxic for the cells will not fluoresce red or green; finally, cells treated with a compound exerting no toxicity on the cells and no effect upon viral infection will fluoresce green and red.

We will likely finish the initial experimental set up during spring 2010 and will initiate the large high-throughput screenings during fall 2010.

"Molecular and Cellular Immunology" (On-Going)

Over the past decade, Dr. Aguilera’s group has cloned and characterized DNase II enzymes
from several species. Work from his laboratory and others has revealed that these enzymes are essential for phagocytic DNA degradation. His group has also recently demonstrated that depletion of this enzyme results in severely immuno-compromised fruit flies that rapidly succumb to bacterial infection. Subsequent, microarray analyses revealed that a large number of genes are affected by depletion of DNase II and current studies are underway to determine which genes are responsible for the loss of fly viability after infection.

"Screening of Chemical Libraries on Human Cancer Cells and various Pathogens“ (On-Going)

Dr. Aguilera’s laboratory has recently developed assays for the tandem screening of chemical libraries on human cancer cells, Mycobacteria and E. coli. The ultimate goal of these assays is to discover compounds that can kill specific cancer cells or kill Mycobacteria but not other bacteria/pathogens. The simultaneous screening of compounds of various pathogens and cancer cell types could lead to the discovery of new antimicrobial or anticancer drugs. A patent application entitled “Methods for screening agents for cytotoxic and antimicrobial activity” has been recently submitted that incorporates the recently developed novel screening methods.

SERVICE

College Service

Committee Member, Tenure and Promotion Committee. (January 2008 - January 2011).

University Service

Committee Member, College of Science Tenure and Promotion Committee. (December 2008 - Present).

AdHoc Grant Reviewer, National Science Foundation. (2005 - 2007).

Committee Member, Department of Biology, Qualifying Exams Committee, University of California Los Angeles. (1992 - 2002).

Committee Member, University of California Los Angeles Advisory Board for the Center for Academic and Research Excellence. (1992 - 2002).

Committee Member, University of California Los Angeles Leadership Committee, Jonsson Comprehensive Cancer Center. (1992 - 2002).

Committee Member, Advisory Board for the Chicano Studies Reseach Center, University of California Los Angeles. (1994 - 1996).

Committee Member, MD/Ph. D. Medical Scientist Training Program Admissions Committee, University of California Los Angeles. (1993 - 1996).


Committee Chair, University of California Post-Doctoral Fellowship Review Committee. (1992).

Committee Member, University of California Los Angeles, Provost' Committee on Chicano Studies. (1991).

Professional Service

Reviewer, Grant Proposal, Biomedical Research Council of Singapore -A*STAR-DSTA JOINT PROGRAMME. (October 2009 - Present).

Committee Member, University of Puerto Rico MBRS-RISE External Advisory Committee. (2008 - Present).

Member, Brooklyn College SCORE External Advisory Committee. (2007 - Present).


Reviewer, Grant Proposal, NIH Pioneer Awards. (September 2008 - September 2010).

Committee Chair, American Association for Cell Biology, Minority Affairs Committee. (2002 - 2009).

Committee Member, 11th RCMI International Symposium on Health Disparities. (2008).

Member, 2nd Annual Conference on Understanding Interventions That Encourage Minorities to Pursue Research Careers. (2008).

Committee Member, Biomedical Research Steering Committee/ Texas Tech School of Medicine, El Paso, Texas. (2008).

Member, Summer Junior Faculty/ Postdoctoral Fellow Survival Skills Workshops at the Marine Biology Laboratory, Washington, DC. (2008).

Guest Speaker, Workshop sponsored by the ASCB and the AAAS for new faculty and postdoctoral fellows seeking academic positions. (2008).


Committee Member, Travel Award Selection Committee for American Society of Cell Biology. (2005 - 2008).

Member, Board of Scientific Counselors of the National Institute of Environmental Health Sciences. (2003 - 2008).

Committee Chair, SACNAS Conference, Salt Lake City, Utah. (October 2008).

Guest Speaker, California State University, Northridge, California. (2007).

Member, National Science Foundation Committee of Visitors. (2005 - 2007).
Faculty Recruiter, Summer Junior Faculty/ Postdoctoral Fellow Survival Skills Workshops at the Marine Biology Laboratory, Woods Hole, Massachusetts. (2005 - 2007).

Guest Speaker, SACNAS Conference, SACNAS Conference, Missouri. (October 2007).

Guest Speaker, Health Disparities Symposium (RCMI), San Juan, Puerto Rico. (2006).

Guest Speaker, San Marcos State University, San Marcos, Texas. (2006).

Guest Speaker, UCLA, MARC Program. (2006).

Committee Member, Abstract Selection Committee for the Society for the Advancement of Chicanos and Native Americans in Science. (2005).


Guest Speaker, San Francisco State University, San Francisco, California. (2005).

Committee Chair, Search Committee for Departmental Chair. (2005).

Guest Speaker, University of Texas Medical Branch, Galveston, Texas. (2005).


Guest Speaker, California State University, San Marcos Spring. (2002).

Guest Speaker, El Paso Community College. (2002).

Member, National Science Foundation Genetics Study Section. (2001 - 2002).

Committee Chair, Chair Admission Committee, Molecular Cell and Dev. Biology Department. (1998 - 2002).


Guest Speaker, UCLA, Jonsson Comprehensive Cancer Center. (2001).

Guest Speaker, University of Illinois, Urbana-Champaign. (2001).


Guest Speaker, California State University, Fullerton, California. (2000).

Attendee, Meeting, 8th International Workshop on Ataxia Telangiectasia. (1999).

Attendee, Meeting, Annual UC President's Fellowship Meeting, Oakland, California. (1999).
Guest Speaker, California Forum for Diversity in Graduate Education. (1999).
Faculty Recruiter, California Polytechnic University at Pamona, Spring. (1999).
Member, National Institutes of General and Medical Sciences. (1999).
Guest Speaker, San Francisco State University, San Francisco, California. (1999).
Guest Speaker, Texas Alliance for Minority Participation, Austin, Texas. (1999).
Guest Speaker, St. Mary's University. (1998).
Guest Speaker, University of California at Irvine. (1998).
Guest Speaker, University of Texas El Paso. (1998).
Committee Member, American Association for the Advancement of Science, Committee on Societal Impacts of Science and Engineering. (1994 - 1997).
Chairperson, Local Arrangements and Planning Committee for the Los Angeles National SACNAS meeting. (1996).
Member, American Society for Microbiology. (1994 - 1995).
Guest Speaker, Brown University. (1994).
Member, National Institute of General Medical Sciences, Advisory Committee for the Minority Opportunities in Research Programs. (1994).
Guest Speaker, UCLA's Howard Hughes Medical Institute, Biomedical Careers. (1994).
Guest Speaker, New Mexico State University. (1993).
Guest Speaker, University of Texas at San Antonio. (1993).
Guest Speaker, California State University at Northridge. (1992).
Guest Speaker, Mount Saint Mary's College. (1992).
Education

Ph D, Escola Paulista de Medicina-EPM (currently UNIFESP), 1994.
  Major: Microbiology and Immunology

MS, Escola Paulista de Medicina (EPM, 1989.
  Major: Molecular Biology

UNK, Universidade Regional do Nordeste (currently UEPb), 1981.
  Major: Pharmacy degree

Professional Positions

Other

Professor-Doctor (tenured), Dept. of Parasitology, University of Sao Paulo (USP). (2000 - 2004).

Post-doctoral Fellow, Division of Molecular Parasitology and Biological Chemistry. (1996 - 1998).

Professional

Associate Professor (with tenure), University of Texas at El Paso. (October 1, 2008 - Present).


Regular Member of Pathogenic Eukaryote Review Panel, National Institutes of Health (NIH), USA. (July 1, 2009 - June 30, 2014).

Associate Professor (tenure-track), University of Texas at El Paso. (October 1, 2004 - September 30, 2008).


Professor-Doctor (non-tenured), Dept. of Parasitology, University of Sao Paulo (USP). (1999).

Visiting Adjunct Professor, DMIP, EPM/UNIFESP. (1995 - 1996).

Substitute Adjunct Professor. (1994 - 1995).

Substitute Adjunct Professor, Dept. of Microbiology, Immunology and Parasitology (DMIP). (1993 - 1994).


Professional Memberships


Brazilian Society for Protozoology (SBPz). (1998 - Present).


PhD Fellowship. (1990 - 1994).


Awards and Honors

Distinguished Achievement Award, College of Science, UTEP. (2009).

STARS Block Award, (UT System funds), University of Texas at El Paso, College of Science. (July 2007).

Proteomics and Bioinformatics Workshop Team Travel Award. (January 31, 2006).

TEACHING

Teaching Experience

The University of Texas at El Paso

BIOL 4398, Special Problems, 2 courses.
BIOL 5301, Select Adv Topics Biol Science, 1 course.
BIOL 5302, Resrch Biological Science, 4 courses.
BIOL 5399, Thesis, 1 course.
BIOL 6345, Molecular Parasitology, 1 course.
BIOL 6390, Independent Research, 4 courses.
BIOL 6398, Dissertation, 1 course.
BIOL 6399, Dissertation, 3 courses.
BIOL 6690, Independent Research, 3 courses.
MICR 4453, Immunology, 9 courses.

Directed Student Learning

Advised: Mayte Yichoy
  Advised: Priya Venkatakrishnan

  Advised: Ernesto Nakayasu

  Advised: Koksun Looi

Master's Thesis Committee Member. (2006).
  Advised: Estrada Armando

Master's Thesis Committee Member. (2006).
  Advised: Jose Losano

RESEARCH

Published Intellectual Contributions

Refereed Journal Articles


**Journal Articles**


**Other**


**Contributed Presentations**


**Contracts, Grants and Sponsored Research**

**Grant**

Gosselink, Kristin (Supporting), Natalicio, Diana S (Principal), Kirken, Robert A (Supporting), Garza, Kristine M (Supporting), Aguilera, Renato (Supporting), Almeida, Igor C (Supporting), Johnson, Kyle L (Supporting), Das, Siddhartha (Supporting), Elzey, Joanne T (Supporting), Walsh, Elizabeth A (Supporting), Han, Kyung-An (Supporting), "Border Biomedical Research Center," Federal, $1,400,000.00. (June 1, 2009 - May 31, 2014).

**Research in Progress**

"Cellular and Molecular Biology of Lipids in Parasitic Protozoa, Giardia lamblia" (On-Going)

The current research in our laboratory is focused on elucidating the mechanisms of internalization, targeting and synthesis of membrane lipids in an intestinal protozoan Giardia lamblia and Entamoeba inavdens. These parasites exist in two morphological forms (1) the flagellated trophozoite and (2) the water-resistant cyst. Exposure of cysts to gastric acid during passage through the stomach triggers excystation while factors in the small intestine, where trophozoites colonize, induce encystation or cyst formation. Successful operation of this excystation-encystation cycle is important for Giardia and Entamoeba to survive, multiply and differentiate in the human small intestine. Although metronidazole and the related drug 5-nitroimidazole (tinidazole,) are prescribed to treat intestinal infections, the clinical resistance to these drugs is well documented. To overcome the drug-resistance phenomenon, attempts have been made to treat the patients with quinacrine and albendazole in combination with
metronidazole. Interestingly, it has been shown that an albendazole-resistant giardiasis can readily develop—giving rise to a multiple-drug-resistant phenotype. As a consequence, it is important to identify a new and effective therapy to control giardiasis both in the United States in other developed and developing countries. Using genomic, bioinformatic, cellular and molecular methodologies we are investigating how lipids are internalized, trafficked and remodeled by this parasite, and if these unique metabolic strategies can be utilized as targets to develop new therapies against parasitic infections.

"Citizenship and Civic Responsibility, Border Studies" (On-Going)
The incorporation of trace elements into bacterially mediated mineral precipitates. Understanding the mobility of trace metals and metal-radionuclides is critical in assessing the environmental impact of contaminants and evaluating nuclear waste disposal options. One pathway for the immobilization of trace elements is their incorporation into mineral phases. Trace element-substituted minerals may also have important materials science applications and/or might be used to trace historic bacterial processes.

"Proteomic analysis of influenza virus protein SUMOylation" (On-Going)
The ultimate goal of this project is to identify all the influenza viral proteins that are SUMOylated during infection. This will provide insights into the potential roles played by SUMOylation during viral infection.

We have recently demonstrated that the cellular SUMOylation system affects and is affected by influenza virus infection. Our initial analyses have conclusively identified 2 viral proteins as authentic SUMO targets, and have indicated the existence of 2 likely additional viral SUMO targets. However, our in vitro analyses indicated that virtually all the proteins produced by influenza virus are SUMO targets. Therefore, we want to verify whether other viral proteins constitute bona fide SUMO targets during infection using a proteomic approach. To this end, we have developed an effective method to purify all SUMOylated proteins from influenza-infected cells. We will be executing various purifications followed by tandem mass spectrometry analyses to identify all the viral proteins that are SUMOylated at any time upon viral infection.

These studies are aimed to be finished by fall 2010.
Dr. Ricardo A. Bernal  
The University of Texas at El Paso  
Chemistry  
(915) 747-6918  
Email: rbernal@utep.edu

Education

Postdoctoral, Medical Research Council- Laboratory of Molecular Biology, 2006.  
Major: Cyro-Electron Microscopy

Ph D, Purdue University, 2002.  
Major: X-Ray Crystallography & Cyro-Electron Microscopy

Major: Biological Sciences

Major: Microbiology

Professional Positions

Academic - Post-Secondary

Assistant Professor, The University of Texas at El Paso, Chemistry Department. (August 2006 - Present).

Postdoctoral Research Fellow, Laboratory of Molecular Biology. (November 2002 - August 2006).

Graduate Research, Purdue University. (August 1996 - November 2002).

Senior Research Technician, Frederick Cancer Research and Developmental Center/ Laboratory of Viral Carcinogenesis, Viral Pathology Section. (January 1994 - February 1995).


Other

Senior Research Technician, Frederick Cancer Research and Developmental Center/ Laboratory of Drug Discovery Research and Development DPT-DCT. (March 1995 - August 1996).

Professional Memberships

Sigma Xi. (2007).

Sigma Xi. (1993).

American Society for Microbiology. (May 1993).


Awards and Honors

MRC Career Development Award Postdoctoral Fellowship. (2004).
EMBO Postdocoral Research Fellow. (2002).

GAANN Research Fellowship, Purdue University. (2000).

Biophysics Training Grant Fellowship, Purdue University. (1997).

TEACHING

Teaching Experience

The University of Texas at El Paso

BINF 5111, Chem. Sem. for Bioinformatics, 1 course.
BINF 5341, Anal./Model of Bio Structures, 2 courses.
CHEM 4176, Introduction to Research, 5 courses.
CHEM 4330, Biochem: Structure/Function, 2 courses.
CHEM 4376, Introduction to Research, 5 courses.
CHEM 5195, Graduate Seminar, 1 course.
CHEM 5196, Graduate Research in Chemistry, 4 courses.
CHEM 5339, Contemp Topics in Biochemistry, 2 courses.
CHEM 5341, Anal./Model of Bio Structures, 1 course.
CHEM 5396, Graduate Research in Chemistry, 5 courses.
CHEM 5398, Thesis, 4 courses.
CHEM 5399, Thesis, 4 courses.
CHEM 6195, Graduate Seminar, 1 course.
CHEM 6196, Graduate Research in Chemistry, 3 courses.
CHEM 6339, Contemp Topics in Biochemistry, 2 courses.
CHEM 6396, Graduate Research in Chemistry, 10 courses.
CHEM 6398, Dissertation, 3 courses.

Directed Student Learning

Master's Thesis Committee Member. (August 2008 - Present).
Advised: Nadia Herrera

Undergraduate Honors Thesis. (August 2008 - Present).
Advised: Nadia Herrera

Master's Thesis Committee Member. (January 2008 - Present).
Advised: Zahariah Hildenbrand

Master's Thesis Committee Member. (August 2006 - Present).
Advised: Sudheer Molugu

Advised: Kundhavai Natchiar

Undergraduate Honors Thesis. (June 2008 - August 2008).
Advised: Clarissa Enriquez

Undergraduate Honors Thesis. (June 2007 - December 2007).
Advised: Zacariah Hildenbrand

Master's Thesis Committee Member. (January 2007 - August 2007).
Advised: Shilpa Nagula
Advised: Michael Kennedy

Master's Thesis Committee Member. (August 2006 - December 2006).
Advised: Sandhya Samavedam

RESEARCH

Published Intellectual Contributions

Refereed Journal Articles


Journal Articles


Other


Invited Presentations


Contributed Presentations


Bernal, R. A., Department of Biological Sciences, "Three dimensional structure of the Thermus thermophilus ATP synthase by electron microscopy," Purdue University, West Lafayette, IN. (February 27, 2007).


Bernal, R. A., Laboratory of Molecular Bioengineering, "Three dimensional structure of the Thermus thermophilus ATP synthase by electron microscopy," Russian Academy of Sciences, Moscow, Russia. (November 2005).

Contracts, Grants and Sponsored Research

Equipment

Johnson, Kyle L (Co-Principal), Bernal, Ricardo A (Principal), Xiao, Chuan (Co-Principal), Noveron, Juan C (Co-Principal), Chianelli, Russell R (Co-Principal), Das, Siddhartha (Supporting), Cox, Marc B (Supporting), "MRI: Acquisition of a Field Emission Gun Transmission Electron Microscope for Biological Structure Determination," Federal, $1,259,954.00. (August 1, 2009 - July 31, 2012).

Intellectual Contributions in Submission

Refereed Journal Articles

Hildenbrand, Z. L., Molugu, S., Stock, D., Bernal, R. A. The Central Stalk Protein F plays an important role in the regulation of the Yeast V-ATPase. Structure.

Research in Progress

"Characterization of FKBP52-Hsp90 interactions by Cryo-EM" (On-Going)
We are collaborating with Ricardo Bernal in Chemistry to obtain cryo-EM structures of the FKBP52-Hsp90 complex in an attempt to better understand how FKBP52 associates with the complex to regulate client proteins like AR.

"Transportation systems planning and analysis" (On-Going)

SERVICE

Professional Service


Committee Member, Structural Biochemist. (2007).


**Public Service**

Science Fair Judge, UTEP CHAPTER of SACNAS, El Paso, Texas. (April 20, 2007).

Science Fair Judge, BioInformatics Science Fair. (November 2006).
Dr. Marc B. Cox  
The University of Texas at El Paso  
Biological Sciences  
(915) 747-5429  
Email: mbcox@utep.edu

Education

Postdoctoral Fellowship NRSA (NIH/NIDDK), Mayo Clinic, 2007.  
Major: Biochemistry and Molecular Biology

Ph D, Tulane University, 2003.  
Major: Molecular and Cellular Biology  
Dissertation Title: Regulation of Aryl Hydrocarbon Receptor Signaling by p23

MSPH, Tulane University School of Public Health and Tropical Medicine, 1999.  
Major: Environmental Health Sciences  
Supporting Areas of Emphasis: Environmental Toxicology  
Dissertation Title: Development of a Yeast Phenotypic Assay for the Functional Analysis of Factors that Modulate Human Dioxin Receptor Signaling

BS, University of Missouri, 1997.  
Major: Biology  
Dissertation Title: Analysis of pH Dependent Cytotoxicity to MCF-7 Human Breast Cancer Cells Conferred by a Lipophilic Impurity in Phenol Red

Professional Positions

Academic - Post-Secondary

Faculty Member, Environmental Science and Engineering PhD Program, University of Texas at El Paso, El Paso, TX. (2008 - Present).

Assistant Professor, Border Biomedical Research Center, Department of Biological Sciences, University of Texas at El Paso, TX. (June 2007 - Present).


Resident Advisor, Tulane University Medical Center, New Orleans, LA. (1999 - 2001).

Teaching Assistant, Tulane University, New Orleans, LA. (1999 - 2001).

Professional Memberships

Full Member, American College of Toxicology. (2008 - Present).

Full Member, Society of Toxicology. (2008 - Present).

Full Member, Endocrine Society. (2002 - Present).

Member, Delta Omega Honorary Society in Public Health, Eta Chapter. (1999 - Present).

Development Activities Attended

"ORSP Faculty Luncheon." (February 2010).
Seminar, "FKBP52 Regulation of steroid hormone receptor function," University of Idaho, Department of Microbiology, Molecular Biology and Biochemistry. (October 2009).

Conference Attendance, "Characterization and targeting of a putative FKBP52 interaction surface on the androgen receptor hormone binding domain," FASEB Summer Conference: Dynamic Structure of the Nuclear Hormone receptors. (August 2009).


Workshop, "Characterization and targeting of a putative FKBP52 interaction surface on the androgen receptor hormone binding domain," University of California San Francisco. (March 2009).

Seminar, "Characterization and targeting of a putative FKBP52 interaction surface on the androgen receptor hormone binding domain," University of Texas at El Paso Bioinformatics Colloquium. (February 2009).


Tutorial, "Faculty Retreat on Teaching and Learning," University of Texas at El Paso. (August 21, 2008).


Workshop, "National Science Foundation CAREER Award Program," National Science Foundation. (May 28, 2008).


TEACHING

Teaching Experience

The University of Texas at El Paso

BIOL 1305, General Biology, 1 course.
BIOL 4198, Special Problems, 2 courses.
BIOL 4298, Special Problems, 2 courses.
BIOL 4398, Special Problems, 4 courses.
BIOL 5302, Resrch Biological Science, 3 courses.
BIOL 5343, Mechanisms-Cellular Toxicity, 1 course.
BIOL 5398, Thesis, 2 courses.
BIOL 5399, Thesis, 1 course.
BIOL 5502, Resrch in Biological Sciences, 1 course.
BIOL 6301, Environmental Pathobiology, 2 courses.
BIOL 6390, Independent Research, 6 courses.
BIOL 6490, Independent Research, 2 courses.
BIOL 6590, Independent Research, 2 courses.
BIOL 6690, Independent Research, 2 courses.
ESE 6396, Doctoral Research, 10 courses.
ESE 6398, Dissertation, 4 courses.
ESE 6399, Dissertation, 2 courses.

Non-Credit Instruction

Workshop, UTEP Summer REU Program funded by NSF, 12 participants. (May 2009 - August 2009).

Directed Student Learning

Dissertation Committee Member. (February 2010 - Present).
Advised: Mara Hall

Dissertation Committee Member. (November 2009 - Present).
Advised: Bo Peng

Dissertation Committee Member. (September 2009 - Present).
Advised: Zacariah Hildenbrand

Supervised Research. (September 2009 - Present).
Advised: Veronica Wells

Dissertation Committee Member. (February 2009 - Present).
Advised: Jorge Sierra

Supervised Research. (February 2009 - Present).
Advised: Yenni Garcia

Dissertation Committee Chair, "Presence and Distribution of Environmental Glucocorticoids in the Paso Del Norte Region." (September 2008 - Present).
Advised: Heather Balsiger

Supervised Research. (September 2008 - Present).
Advised: Jacaranda Solis

Master's Thesis Committee Chair, "Development of a peptide Mapping Method for the Analysis of FKBP52-Androgen Receptor Interactions." (July 2008 - Present).
Advised: Kimberly Hogle

Dissertation Committee Chair, "Identification and Characterization of FKBP52-Specific Inhibitors for the Treatment of Prostate Cancer." (May 2008 - Present).
Advised: Johanny Meneses De Leon

Master's Thesis Committee Member. (April 2008 - Present).
Advised: Sangita Pal

Dissertation Committee Chair, "FKBP52 and Beta-Catenin Act in Synergy to Promote Androgen Receptor Function in Prostate Cancer." (January 2008 - Present).
Advised: Cheryl Storer
Dissertation Committee Chair, "Indentification and Characterization of FKBP52 functional Domains." (January 2008 - Present).
Advised: Diondra Harris

Dissertation Committee Member. (January 2008 - Present).
Advised: Jaidee Zavala

Master's Thesis Committee Chair, "A Specific Regulatory Role of SGT alpha on the Maturation and Activation of Different Steroid Hormone Receptors." (January 2008 - Present).
Advised: Atanu Paul

Master's Thesis Committee Member. (December 2007 - Present).
Advised: Mrudula Raparla

Dissertation Committee Member. (October 2007 - Present).
Advised: Javier Vargas-Medrano

Dissertation Committee Member. (October 2007 - Present).
Advised: Roberto de la Torre Roche

Dissertation Committee Member. (September 2007 - Present).
Advised: Debarshi Roy

Supervised Research. (June 2009 - August 2009).
Advised: Josue Lopez

Advised: Jennifer Johnson

Advised: Anais Martinez

Supervised Research. (September 2007 - June 2008).
Advised: Diana Parra

Other. (January 2008 - May 2008).
Advised: Susan Van Weelden

Supervised Research. (June 2007 - December 2007).
Advised: Melissa Henry

RESEARCH

Published Intellectual Contributions

Book Chapters


**Refereed Journal Articles**


**Invited Presentations**
Cox, M. B. (Presenter & Author), University of Idaho Departmental Seminar series, "FKBP52 regulation of steroid hormone receptor function," Department of Microbiology, Molecular Biology, and Biochemistry, Moscow, ID. (October 2009).


Cox, M. B. (Presenter & Author), Workshop on the Therapeutic targeting of the Androgen receptor, "Characterization and targeting of a putative FKBP52 interaction surface on the androgen receptor hormone binding domain," University of California San Francisco, San Francisco, CA. (March 2009).

Cox, M. B. (Presenter & Author), UTEP Bioinformatics Colloquium, "Characterization and targeting of a putative FKBP52 interaction surface on the androgen receptor hormone binding domain," UTEP Bioinformatics Program, UTEP. (February 2009).

Contributed Presentations

Cox, M. B. (Presenter & Author), Southwest Regional Meeting of the American Chemical Society, "Characterization and targeting of a putative interaction surface on the Androgen receptor hormone binding domain," American Chemical Society, El Paso, TX. (November 2009).


Cox, M. B. (Presenter & Author), TTUHSC Annual Research Colloquium, "Characterization and targeting of a putative interaction surface on the Androgen receptor hormone binding domain," Texas Tech Health Sciences Center, El Paso, TX. (April 2009).

Cox, M. B. (Presenter & Author), Midwest Stress Response and Molecular Chaperones Meeting, "Characterization and targeting of a putative interaction surface on the Androgen receptor hormone binding domain," Northwestern University, Evanston, IL. (January 2009).

de la Torre, R. (Author Only), Balsiger, H. A. (Author Only), Lee, W.-Y. (Author Only), Cox, M. B. (Presenter & Author), Annual Meeting of the American College of Toxicology, "New advances in the yeast bioassay for use in environmental pollution monitoring and drug discovery," American College of Toxicology, Tuscon, AZ. (November 2008).

Cox, M. B. (Presenter & Author), International Conference on the Hsp90 Chaperone Machine, "Characterization and targeting of a putative interaction surface on the Androgen receptor hormone binding domain," Technical University of Munich, Seeon, germany. (October 2008).


Contracts, Grants and Sponsored Research

Equipment

Johnson, Kyle L (Co-Principal), Bernal, Ricardo A (Principal), Xiao, Chuan (Co-Principal), Noveron, Juan C (Co-Principal), Chianelli, Russell R (Co-Principal), Das, Siddhartha (Supporting), Cox, Marc B (Supporting), "MRI: Acquisition of a Field Emission Gun Transmission Electron Microscope for Biological Structure Determination," Federal, $1,259,954.00. (August 1, 2009 - July 31, 2012).

Grant

Cox, Marc B (Co-Principal), Walsh, Elizabeth A (Principal), Lee, Wen-Yee (Co-Principal), Lougheed, Vanessa L (Co-Principal), "Detecting chemicals of emerging concern in the El Paso/Ciudad Juarez stretch of the Rio Grande."
Cox, Marc B (Co-Principal), Lee, Wen-Yee (Principal), Walsh, Elizabeth A (Co-Principal), "Developing a chemical and biological monitoring system along the El Paso/Jaurez stretch of the Rio Grande," State.

Cox, Marc B (Principal), "Novel anti-androgen therapy for prostate cancer," State.

Cox, Marc B (Co-Principal), Lougheed, Vanessa L (Principal), "Potential of wetlands in attenuating the impacts of emerging contaminants on aquatic ecosystems," State.

Cox, Marc B (Principal), "Presence and distribution of environmental glucocorticoids in the paso del norte region," State.

Cox, Marc B (Principal), "Characterization of FKBP52 Interactions with steroid hormone receptors," Federal, $1,036,000.00. (September 1, 2008 - August 31, 2013).

Cox, Marc B (Principal), Baxter, John (Principal), Fletterick, Robert (Principal), Webb, Paul (Principal), "Modulation of Nuclear receptor Nuclear Translocation," Federal. (September 1, 2010 - August 31, 2011).

Cox, Marc B (Principal), "Genetic Characterization of a Therapeutic Target for the Treatment of Hormone-Dependent Cancers," The University of Texas at El Paso, $3,600.00. (2008).

Cox, Marc B (Principal), "Development of a yeast functional assay for the identification and characterization of pregnane X receptor modulators," $5,000.00. (January 1, 2008 - August 31, 2008).

Other

Cox, Marc B (Principal), "New Lab Startup," Federal, $190,000.00. (April 1, 2007 - August 31, 2009).

Sponsored Research

Cox, Marc B (Principal), "A novel anti-androgen therapy for prostate cancer, a major health disparity in minority populations," Federal, $62,700.00. (July 1, 2010 - December 31, 2010).

Supplement

Cox, Marc B (Principal), "Characterization of FKBP52 Interactions with steroid hormone receptors," Federal, $197,618.00. (September 1, 2009 - September 30, 2010).

Awards and Honors


Basic Research Award in Molecular Biosciences, Annual Tulane Health Sciences Research Day. (2003).

Cancer Association of Greater New Orleans Student Research Grant, Regulation of Dioxin Receptor Signaling by the p23 Co-chaperone. (2002).

Morris F. Schaffer Award, Molecular and Cellular Biology Program. (2002).

Tulane Cancer Center Fellowship, Regulation of Dioxin Receptor Signaling by the p23/Hsp90 Complex. (2002).


Departamental Award for Excellence in Environmental Health Sciences, Department of Environmental Health Sciences, Tulane School of Public Health and Tropical Medicine. (1999).

Intellectual Contributions in Submission

Refereed Journal Articles


Research in Progress

"A role for SGT alpha in Steroid Hormone Receptor Function" (On-Going)
SGT alpha has been characterized as an AR-specific regulator that is involved in prostate cancer progression. We have characterized SGT alpha as a non-specific general regulator of androgen, progesterone and glucocorticoid receptors. In addition we have shown that SGT alpha does not regulate estrogen and mineralocorticoid receptors. We are currently characterizing the mechanism by which SGT alpha regulates receptor function. The data from this work will be used as preliminary data for an NIH grant.

"Characterization and Targeting of FKBP52 Interactions with the Androgen Receptor" (On-Going)
FKBP52 is a positive regulator of androgen receptor and an attractive target for the treatment of prostate cancer. We have identified a putative FKBP52 interaction surface on AR and have identified a series of small molecules that bind this surface and inhibit FKBP52 regulation of AR. We are currently characterizing the mechanism of inhibition and compound effects in human prostate cancer cells. This project has led to a provisional patent and several publications are planned for submission in Spring 2010.

"Characterization of FKBP52-Hsp90 interactions by Cryo-EM" (On-Going)
We are collaborating with Ricardo Bernal in Chemistry to obtain cryo-EM structures of the FKBP52-Hsp90 complex in an attempt to better understand how FKBP52 associates with the complex to regulate client proteins like AR.

"Development of Peptide Mapping Methodologies for the characterization of FKBP52-AR Interactions" (On-Going)
We are developing a photoaffinity-based cross linking method coupled with mass spec for use in mapping the FKBP52 binding site on AR.

"Development of Yeast-Based Bioassays for Use in Screening Environmental Samples" (On-Going)
We have modified the yeast bioassay to a 4-hour format for use in screening for the presence of estrogens. This new assay protocol has been submitted for publication. We are currently developing similar assays for screening for the presence of androgens, glucocorticoids, and dioxins.

"FKBP52/beta-Catenin Synergy in Prostate Cancer" (On-Going)
We have identified a synergistic relationship between FKBP52 and beta-catenin on androgen receptor function. This synergy could be a major mechanism by which prostate cancer progresses to the hormone refractory state. We are characterizing this novel regulatory mechanism and testing the ability of our novel FKBP52 inhibitors to target this synergy.

"Genetic Characterization of the FKBP52 Binding Site on Androgen Receptor" (On-Going)
We have identified a putative FKBP52 binding site on AR. We are using yeast genetic approaches coupled with mutagenesis to characterize this binding site.

"Identification and Characterization of FKBP52 Functional Domains" (On-Going)
We have made progress in understanding the functional requirements for FKBP52 regulation of AR but we still do not have a full understanding of FKBP52 functional domains and/or residues. We are using various approaches including cross species comparisons and random mutagenesis to identify additional residues required for FKBP52 function.

SERVICE

Department Service
Committee Member, Undergraduate Biochemistry Degree Planning Committee. (October 2009 - Present).

College Service
Faculty Advisor, COS Graduate Student Council. (November 2008 - Present).
Committee Member, Bioengineering Search Committee. (October 2007 - February 2008).

University Service
Committee Member, Faculty Senate Admissions and Standards Committee. (November 2009 - Present).
Committee Member, Financial Aid Appeals Committee. (April 2009 - Present).
Attendee, Graduation. (December 2009).
Advisor, New student orientation and advising. (August 2009).
Attendee, Graduation. (May 2009).
Judge, Greek Week Lip Sync Contest. (April 2009).
Attendee, Award Ceremony, Student Government Association Awards Banquet. (April 2009).
Judge, UTEP SACNAS Student research Expo. (April 2009).
Awards Reviewer, UTEP Men and Women of Mines Awards. (March 2009).
Awards Reviewer, Who's Who Among American Colleges and Universities. (March 2009).

Attendee, Graduation. (December 2008).

Guest Speaker, Graduate Student Orientation. (August 2008).

Committee Member, Advising Task Force - Bridging the Gap Subcommittee. (April 2008 - June 2008).

Attendee, Graduation. (May 2008).

Judge, UTEP SACNAS Student Research Expo. (April 2008).

Committee Member, Foundations of Excellence - Roles and Purposes Subcommittee. (December 2007 - March 2008).

Attendee, Graduation. (December 2007).

**Professional Service**

Session Chair, Midwest Stress Response and Molecular Chaperones Meeting, Evanston, IL. (January 2010).

Reviewer, Ad Hoc Reviewer, BBA - Molecular Cell Research. (October 2009).

Reviewer, Ad Hoc Reviewer, Cell Stress and Chaperones. (July 2009).


Session Chair, Midwest Stress Response and Molecular Chaperones Meeting, Evanston, IL. (January 2009).


Reviewer, Ad Hoc Reviewer, EMBO Reports. (May 2008).


**Public Service**


Consulted on a High School Science Project. (December 2009).


Judge, Da Vinci School for Science and the Arts Science Fair. (December 2008).
Da Vinci School for Science and the Arts Science Fair. (January 2008).

Judge, Ascarate Elementary School Science fair. (November 2007).
Professor Siddhartha Das  
The University of Texas at El Paso  
Biological Sciences  
(915) 747-6896  
Email: sdas@utep.edu

Education

Ph D, University of Calcutta, 1982.  
Major: Biochemistry

MS, University of Calcutta, 1977.  
Major: Biochemistry

BS, University of Calcutta, 1975.  
Major: Chemistry (Hons)

Professional Memberships

The International Society of Protistologies. (January 1, 2007 - Present).

None, The Biochemical Scociety (UK). (April 11, 1994 - Present).

The American Society of Tropical Medicine and Hygiene. (January 1, 1993 - Present).

None, The American Society for Biochemistry and Molecular Biology. (June 1, 1992 - Present).

TEACHING

Teaching Experience

The University of Texas at El Paso

BIOL 4198, Special Problems, 2 courses.  
BIOL 4298, Special Problems, 2 courses.  
BIOL 4398, Special Problems, 5 courses.  
BIOL 5301, Select Adv Topics Biol Science, 1 course.  
BIOL 5302, Resrch Biological Science, 2 courses.  
BIOL 6306, Membrane Biology, 1 course.  
BIOL 6390, Independent Research, 4 courses.  
BIOL 6398, Dissertation, 1 course.  
BIOL 6399, Dissertation, 1 course.  
BIOL 6490, Independent Research, 1 course.  
BIOL 6590, Independent Research, 1 course.  
BIOL 6690, Independent Research, 4 courses.  
MICR 3445, Microbial Physiology, 8 courses.

Directed Student Learning

Dissertation Committee Chair.  
Advised: Jorge Anibal Fonseco

Dissertation Committee Chair. (January 15, 2008 - Present).  
Advised: Trevor Duarte
Dissertation Committee Chair. (September 1, 2007 - Present).
Advised: Tavis Mendez

Dissertation Committee Chair. (January 15, 2006 - Present).
Advised: Debarshi Roy

Advised: Mayte Yichoy

Dissertation Committee Chair, "Sphingolipid synthesis and metabolism as a target for anti Giardial therapy." (May 1, 2007).
Advised: Yunuen Hernandez

Master's Thesis Committee Chair, "Possible interactions between phospholipase A(2)S and COX-2 in colon carcinoma cell line, HT-29." (August 20, 2004 - May 1, 2007).
Advised: Sandra G. Macias

Master's Thesis Committee Chair, "Regulation of microtubule assembly by betagamma subunits of G proteins." (January 1, 2006).
Advised: Christina Gutierrez

Dissertation Committee Chair, "Arachidonic acid, phospholipase A2, and colorectal carcinogenesis." (January 15, 2002 - May 1, 2005).
Advised: Raymond T. Jones

RESEARCH

Published Intellectual Contributions

Refereed Journal Articles


Contracts, Grants and Sponsored Research

Equipment

Johnson, Kyle L (Co-Principal), Bernal, Ricardo A (Principal), Xiao, Chuan (Co-Principal), Noveron, Juan C (Co-Principal), Chianelli, Russell R (Co-Principal), Das, Siddhartha (Supporting), Cox, Marc B (Supporting), "MRI: Acquisition of a Field Emission Gun Transmission Electron Microscope for Biological Structure Determination," Federal, $1,259,954.00. (August 1, 2009 - July 31, 2012).

Grant

Gosselink, Kristin (Supporting), Natalicio, Diana S (Principal), Kirken, Robert A (Supporting), Garza, Kristine M (Supporting), Aguilera, Renato (Supporting), Almeida, Igor C (Supporting), Johnson, Kyle L (Supporting), Das, Siddhartha (Supporting), Ellzey, Joanne T (Supporting), Walsh, Elizabeth A (Supporting), Han, Kyung-An (Supporting), "Border Biomedical Research Center," Federal, $1,400,000.00. (June 1, 2009 - May 31, 2014).

Das, Siddhartha (Co-Principal), "BBRC-Infectious Diseases," Federal, $143,665.00. (September 1, 2008 - August 31, 2013).

Das, Siddhartha (Principal), "SPHINGOLIPIDS AS POTENTIAL TARGETS FOR ANTI-GIARDIAL THERAPY," Federal, $390,000.00. (June 1, 2007 - May 31, 2011).

Shpak, Max (Co-Principal), Das, Siddhartha, "Sphingolipid genes in evolutionarily basal protists," Federal, $0.00. (January 2008 - December 2010).

Awards and Honors

Outstanding Research Award, College of Science, UTEP. (2008).

Intellectual Contributions in Submission

Book Chapters

Other


Research in Progress

*Annotation of Giardia lamblia Genome* (On-Going)
Bioinformatic Characterization of predicted genes in the total genome of Giardia lamblia.

*Arachidonic acid, GPCR and breast cancer* (On-Going)
The goal of my proposal is to test the hypothesis that G-protein-coupled-receptors (GPCRs) play critical roles in the initiation and progression of breast cancers by inducing hyper-arachidonic acid (hyper-AA) metabolism leading to the syntheses of excess inflammatory lipid mediators that participate in rapid cell growth, angiogenesis, and tumor formation. Our preliminary results demonstrate that AA treatment stimulates the syntheses of eicosanoid molecules in transformed breast cells (MCF10A) but not in malignant cells (MCF-7), and this could be due to the fact that COX-2 expresses constitutively in cancer cells. Interestingly, it was observed that various G-protein agonists stimulate the syntheses of thromboxane A2 and HETE compounds in MCF-7 but not in MCF10A cells, suggesting that the molecular and functional alterations of GPCRs, which occur during carcinogenesis, might be involved in causing hyper AA metabolism. It was observed that cPLA2 activity was ~2-fold lower in MCF10A and can be further inhibited significantly by G-protein agonists. Arachidonic acid treatment also altered the syntheses of Gsα, Gqα, Giα and Gβγ both at mRNA and protein levels and changed their characteristic cellular localizations. Currently, we are studying the possible interactions between GPCR signaling and AA metabolism in greater detail both in non-cancer and cancer cells to establish the pathways more clearly. Therefore, the goals of our proposals are: (1) To evaluate the syntheses of various arachidonic acid-derived lipid mediators in MCF10A, MCF-7 and MDA-MB-231 cells in the presence and absence of agonists and antagonists for GPCRs, and the inhibitors of cPLA2 and COX-2 enzymes (2) To determine the role of cPLA2 and COX-2 in GPCR-mediated eicosanoid productions in breast cancer cells by knocking down the expression of cPLA2 and COX-2 using siRNA technology, and (3) To evaluate whether the production of AA-derived eicosanoid syntheses in MCF10A cells is prostaglandin D2 receptor (DP2) dependent. This receptor is expressed only in normal and transformed cells, and its deficiency facilitates vascular leakage and angiogenesis, most likely by facilitating the syntheses of prostaglandins and other inflammatory lipid mediators. If successful, the proposed research will open a new area of investigation linked to AA metabolism and GPCR signaling in breast cancer cells.

*Cellular and Molecular Biology of Lipids in Parasitic Protozoa, Giardia lamblia* (On-Going)
The current research in our laboratory is focused on elucidating the mechanisms of internalization, targeting and synthesis of membrane lipids in an intestinal protozoan Giardia lamblia and Entamoeba inavdens. These parasites exist in two morphological forms (1) the flagellated trophozoite and (2) the water-resistant cyst. Exposure of cysts to gastric acid during passage through the stomach triggers excystation while factors in the small intestine, where trophozoites colonize, induce encystation or cyst formation. Successful operation of this excystation-encystation cycle is important for Giardia and Entamoeba to survive, multiply and differentiate in the human small intestine. Although metronidazole and the related drug 5-nitroimidazole (tinidazole,) are prescribed to treat intestinal infections, the clinical resistance to these drugs is well documented. To overcome the drug-resistance phenomenon, attempts have been made to treat the patients with quinacrine and albendazole in combination with...
metronidazole. Interestingly, it has been shown that an albendazole-resistant giardiasis can readily develop—giving rise to a multiple-drug-resistant phenotype. As a consequence, it is important to identify a new and effective therapy to control giardiasis both in the United States in other developed and developing countries. Using genomic, bioinformatic, cellular and molecular methodologies we are investigating how lipids are internalized, trafficked and remodeled by this parasite, and if these unique metabolic strategies can be utilized as targets to develop new therapies against parasitic infections.

"Hyper-arachidonic acid metabolism, PLA2s and colorectal carcinogenesis" (On-Going)
Colorectal cancer (CRC) is the 2nd leading cause of cancer related deaths in the United States. Each year there are 130,000 new diagnoses and 56,000 deaths attributed to CRC. Most cases of CRC are sporadic, however certain disease states predispose to the development of CRC. Inflammation has been associated with cancer and its risk increases in patients with inflammatory bowel disease depending on the extension of the affected area, age of onset, and duration. Rapid synthesis of archidonoyl-phospholipid (AA-PL) and its simultaneous hyper-metabolism in transformed and malignant cells play a central role in producing the excess inflammatory molecules e.g., prostaglandins, thromboxanes and leukotrienes with the help of cycloxygenase (COX) and lipooxygenase (LOX) enzymes, which are responsible for cell proliferation, tumorigenesis, invasion and metastasis. The major goal of our laboratory is to better understand the interplay among various phospholipase-A2s during hyper-arachidonic acid metabolism. We found that pre- or post-treatment of HT29 cells with these inhibitors either potentiate or reverse many cellular events induced by short-term AA treatment, and suggest a possible interplay between sPLA2 and cPLA2 isotypes during hyper AA metabolism. We speculate that the catalysis of AA-PL by cPLA2 is dependent on the activation of sPLA2, and interactions between these enzymes are important for AA release and other cellular events. Recently, we were successful in knocking down cPLA2 and sPLA2 genes using siRNA. These knockdown cells will be useful in validating inhibitors data as well as testing our hypothesis. We are using high-throughput screening system to screen small molecules that will effectively block PLA2s and hyper-arachidonic acid metabolism. Our next goal is to test effective PLA2 inhibitors in tumor formation by APC min mouse or other suitable transgenic mouse that serve as models for studying colon cancer.

"Regulatory roles of sphingolipid metabolism in Giardia lamblia" (On-Going)
The goal of our second project is to delineate the role of sphingolipids (SLs) in regulating the growth and encystation Giardia. Our preliminary results indicated that this parasite has limited ability to synthesize sphingolipids de novo and therefore depends upon exogenous sources for growth and encystation. Only five sphingolipid metabolic genes are present in Giardia, and they transcribe differentially in trophozoites and encysting cells. These genes are: (1) giardial -serine-palmitoyltransferase 1 and -2 subunit genes (gspt1 and gspt2), (2) glucosylceramide transferase 1 (gglt1), and (3) two acid sphingomyelinase genes (gasmase1 and -2). The functional analyses indicated that serine-palmitoyltransferases (gSPTs) regulate ceramide endocytosis, which is important because Giardia is unable to synthesize ceramide de novo. On the other hand, glucosylceramide transferase (gglt1) is involved in encystation and in cyst production by regulating the synthesis of encystation-specific vesicles (ESVs). Among the two acid sphingomyelinases, gASMase1 appears to be cytoplasmic, and gASMase2 is most likely secreted by the parasite. It is possible that cytoplasmic gASMase1 synthesizes ceramide-enriched lipid rafts for encystation signaling and that secreted gASMase2 interacts with intestinal epithelia during infection. Based on these observations, we hypothesize that Giardia utilizes its gspt and gglc1 genes to maintain the growth and encystation, and gsmase genes for the synthesis of encystation-specific lipid rafts, as well as for inducing host-Giardia interactions. Currently, we are investigating the following specific aims:

Aim-1: The mechanism by which giardial serine palmitoyltransferase genes (gspts) regulate ceramide endocytosis, and parasite growth and differentiation.
Aim-2: The role of the glucosylceramide synthesis gene (gglt1) in ESV biogenesis and cyst production; and
Aim 3: Whether gasmases are required for lipid raft synthesis as well as host-Giardia interactions

SERVICE

Department Service

Faculty Mentor, Faculty advisor.

Committee Member, SACS.

Advisor and mentor, Undergraduate Microbiology advisor.

Committee Member, a. Ad-hoc member, Advisory Committee, Biological Sciences. (September 1, 2008 - Present).

Unit director, Infectious Disease and Immunology Unit, BBRC. (September 1, 2009 - August 31, 2013).

Deputy Director, SCORE Program. (June 1, 2007 - May 30, 2011).

College Service

Attendee, Meeting, Biochemistry curriculum development committee.

University Service

Committee Chair, University Research Initiatives (URI). (September 1, 2009 - May 30, 2011).
Dr. Joanne T. Ellzey  
The University of Texas at El Paso  
Biological Sciences  
(915) 747-6880  
Email: jellzey@utep.edu

Education

Ph D, University of Texas at Austin, 1969.  
Major: Botany-Cell Biology

MA, University of North Carolina, 1963.  
Major: Zoology

BA, Randolph-Macon Woman's College, 1959.  
Major: Biology

Professional Positions

Academic - Post-Secondary

Professor, Biological Sciences, University of Texas at El Paso. (2001).

Associate Professor, Biological Sciences, University of Texas at El Paso. (1975 - 2001).

Assistant Professor, Biological Sciences, University of Texas at El Paso. (1969 - 1975).

NIH Trainee in Cell Research Institute, University of Texas at Austin. (1964 - January 1969).


Professional Memberships

American Society for Microbiology.

Beta Beta Beta.

Matrix Society, University of Texas at El Paso.

Microscopy Society of America.

Mycological Society of America.

Texas Society for Electron Microscopy.

Development Activities Attended


Workshop, "Introduction to Web CT Workshop," University of Texas El Paso. (October 25, 2005).


Workshop, "How to make passive learners critical thinkers," CETaL workshop. (September 24, 1999).

Workshop, "realignment of undergraduate courses," MIE Workshop. (September 16, 1999).


Workshop, "Teaching Critical Thinking," CETaL workshop. (February 1, 1999).


Luncheon Meetings, "faculty presentations on collaborative learning." (1997).


Workshop, "Digitizing Your Resources," TLC Workshop. (June 26, 1997).

Workshop, "MIE Collaborative Learning Workshop." (May 19, 1997 - May 23, 1997).


Workshop, "Interactive (Peer Instruction) in Large Classrooms," Dr. Karl Smith Workshop. (March 24, 1997).

Orientation, "Teaching in the UGLC." (March 7, 1997).

Workshop, "Library Orientation." (February 19, 1997).


Awards and Honors


Doctoral student ombudsman, Biological Sciences, University of Texas El Paso. (2008).

UCM Award for Leadership Service for 17 years, Wesley Foundation. (December 2003).

Outstanding Graduate Student in Biological Sciences, University of Texas at El Paso. (1996).

Outstanding Undergraduate Research Student for Biological Sciences, MARC. (1995).

TEACHING

The University of Texas at El Paso

BIOL 1305, General Biology, 2 courses.
BIOL 4223, Trans Electron Microscopy, 2 courses.
BIOL 4322, Biol Ultrastruc Interpretation, 2 courses.
BIOL 4398, Special Problems, 3 courses.
BIOL 5302, Resrch Biological Science, 1 course.
BIOL 5323, Ultrastructure, 2 courses.
BIOL 6390, Independent Research, 1 course.
ESE 6396, Doctoral Research, 11 courses.
ESE 6398, Dissertation, 5 courses.
ESE 6399, Dissertation, 5 courses.
MICR 4355, Medical Mycology, 2 courses.

Directed Student Learning

Dissertation Committee Chair, "Biological Effects of Copper on Prosopis pubescenes." (August 22, 2008 - Present).
  Advised: Marian N. Viveros

Dissertation Defense Committee Chair, "Tolerance of C57BL/6J Male Mice to Arsenic Toxicity."  
  Advised: Jaime B. Vigo

Master's Thesis Committee Chair, "Studies of the Cytoskeleton of Schizosaccharomyces pombe and Saccharomyces cerevisiae." (December 2, 2005).
  Advised: Anabelle Aranda de Gonzalez

  Advised: Lucia Godinez

  Advised: Jeffery Miranda

Master's Thesis Committee Chair, "Asthma and Allergic Rhinitis Incidences and Environmental Associations in a Pediatric Population from William Beaumont Army Medical Center." (August 2, 2002).
  Advised: Laura Louise Dader

Master's Thesis Committee Member, "Secretion and Processing of the Helicobacter pylori Vacuolating Cytotoxin Protein." (May 3, 2002).
  Advised: Adrianna Galindo

Master's Thesis Committee Member, "Impact of Drainage Canals on the Middle Rio Grande River Water Quality." (April 15, 2002).
  Advised: Wyndi McElroy

  Advised: Cruz Arturo Munoz

  Advised: Horacio Gonzalez

  Advised: Miguel A. Aguilar, Maria Alvarez

Undergraduate Honors Thesis, "A computerized morphometric analysis of the effects of ethanol on lipids, lysosomes, and smooth endoplasmic reticulum of Peromyscus maniculatus."
Advised: Luis Castaneda

Master's Thesis Committee Chair, "A computerized morphometric analysis of the effects of ethanol on hepatocyte peroxisomes and mitochondria of Peromyscus maniculatus." (June 16, 1997).

Advised: Jonathan Drake

Master's Thesis Committee Member, "Survival, adsorption, and subsurface transport of indicator viruses in aquifers using laboratory and field experiments." (1996).

Advised: Scot Eugene Dowd


Advised: Tamara Lynn Stevens


Advised: Daniel Borunda

Master's Thesis Committee Member, "Effects of crown ethers on the transport of ions across Bacillus subtilis membranes." (1994).

Advised: Jose Rivera


Advised: Veronica V. Poppa


Advised: Maria Esther Munoz


Advised: Terry Lee Hammons

Master's Thesis Committee Chair, "Karyotyping Achlya recurva by three-dimensional reconstruction of meiotic nuclei." (1989).

Advised: Hobart Reynolds Williamson


Advised: Delfina Aurora Cisneros Dominguez


Advised: Yolanda Sanchez


Advised: Martha Oaxaca Cooper

Master's Thesis Committee Chair, "Ultrastructural changes in the intestinal capillaries of genetically diabetic mice." (1982).

Advised: Steven T Smith
Master's Thesis Committee Chair, "Ultrastructural changes in the glomeruli of genetically diabetic mice." (1981).
Advised: Patrick H Ashbaugh

Master's Thesis Committee Chair, "Ultrastructure of the distribution of acid and alkaline phosphatases in the sexual cycle of Achlya recurva." (1980).
Advised: George R. Aliaga

Advised: Hope Elaine Huizar

Advised: Walstine Steffens

RESEARCH

Published Intellectual Contributions

Refereed Journal Articles


Journal Articles


Other

Contributed Presentations


Ellzey, J. T., Sigma Xi Luncheon and Initiation Ceremony, "Opportunities in the El Paso Chapter of Sigma Xi," El Paso, Texas. (May 1, 2004).


Ellzey, J. T., MARC Seminar, "An Ultrastructural and Histological analysis of hepatocytes from sodium arsenate exposed C3H/NeNDsd mice," MARC Seminar. (September 23, 2002).

Ellzey, J. T., MARC Seminar, "Stereological parameters of organelles as biomarkers in pathology and toxicology," MARC Seminar. (September 23, 2002).

Ellzey, J. T., MARC Seminar, "Steriological parameters of organelles as biomarkers in pathology and toxicology," University of Texas at El Paso. (September 23, 2002).


Padilla, S., Ellzey, J. T., Dader, L., Research EXPO, "An Ultrastructural and Histological Analysis of Kidney Tissue from Sodium Arsenate Exposed C3h/HeNHsd Mice.," University of Texas at El Paso, El Paso, Texas. (April 18, 2002).
Ellzey, J. T., Research EXPO, "The University of Texas at El Paso Sigma Xi Chapter Opportunities," University of Texas at El Paso, El Paso, Texas. (April 18, 2002).


Ellzey, J. T., Department of Biological Sciences, "Stereological parameters of organelles as biomarkers in pathology and toxicology," University of Texas at El Paso. (September 11, 1998).

Ellzey, J. T., UTEP Sigma Xi seminar, "The effects of alcohol on the liver," University of Texas El Paso Sigma Xi seminar, El Paso, Texas. (May 1, 1996).


Ellzey, J. T., Chemistry Department Seminar, "Ultrastructural studies of the chestnut blight fungus, Endothia parasitica," University of Texas at El Paso. (December 7, 1984).

Ellzey, J. T., Sigma Xi Seminar, "The Return of the American Chestnut?," University of Texas at El Paso. (March 17, 1984).


Contracts, Grants and Sponsored Research

Grant

Gosselink, Kristin (Supporting), Natalicio, Diana S (Principal), Kirken, Robert A (Supporting), Garza, Kristine M (Supporting), Aguilera, Renato (Supporting), Almeida, Igor C (Supporting), Johnson, Kyle L (Supporting), Das, Siddhartha (Supporting), Ellzey, Joanne T (Supporting), Walsh, Elizabeth A (Supporting), Han, Kyung-An (Supporting), "Border Biomedical Research Center," Federal, $1,400,000.00. (June 1, 2009 - May 31, 2014).

Awards and Honors

NIH Traineeship Grant, Cell Research Institute, University of Texas at Austin. (1964).

Research in Progress

"Cross-cultural aspects of health care, Patient explanatory models of disease, Mindfulness Meditation and depression" (On-Going)

Experience    Medical Surgical Nursing, Medical Writing and Editing/Nursing Journalism

"Transmission Electron Microscopy and Confocal Microscopy" (On-Going)

SERVICE

University Service

Committee Member, Amoco Outstanding Teacher Award Committee.

Faculty Advisor, Biology and Microbiology Majors.

Chairperson, New Building Committees for Developmental Biology, Electron Microscopy and Mycology.

Committee Member, Honor's Program Advisory Council. (December 13, 2009 - Present).

Chairperson, Committee on Committees. (2009 - Present).

Committee Member, MARC Advisory Committee. (2000 - Present).

Program Organizer, Analytical Cytology Core, BBRC Grant. (1993 - Present).

Committee Member, MARC Advisory Committee. (1991 - Present).

Committee Member, Pre-Med Advisory Committee. (1984 - Present).
Program Coordinator, Ultrastructure Laboratory. (1973 - Present).
Committee Member, Graduate Faculty. (1970 - Present).
Chairperson, Committee on Committees. (2006 - 2007).
Committee Member, Committee on Committees. (2004 - 2007).
Committee Member, President's Advisory Committee on Women. (2004 - 2006).
Faculty Senate, Biological Sciences Alternate. (2003 - 2005).
Chairperson, PhD Preliminary Exam Committee for Cell Biology/Physiology. (1999 - 2005).
Committee Member, Biological Sciences Advisory Committee. (2001 - 2004).
Committee Member, Men and Women of Mines Committee. (2003).
Faculty Senate Representative, Biological Sciences. (2001 - 2003).
Chairperson, Physiology Search Committee, Biological Sciences. (2001 - 2002).
Committee Member, Advisory Committee for Women's Mentoring Program. (2000 - 2002).
Vice-Chair, Faculty Senate Committee on Committees. (2000 - 2002).
Committee Member, UTEP Committee on Committees. (1999 - 2002).
Committee Member, Doctoral Program in Genetics and Environmental Toxicology Committee. (2000 - 2001).
Committee Member, President's Advisory Committee on Women. (1999 - 2001).
Committee Member, Presidential Incidental Fees Committee. (1995 - 2001).
Committee Member, Search Committee for Environmental Health and Safety. (2000).
Committee Member, Search Committee for a Virologist and a Microbiologist. (1999 - 2000).
Faculty Senate Representative, Biological Sciences. (1998 - 2000).
Committee Member, Search Committee of Laboratory Coordinator. (1999).
Committee Member, Departmental Teaching Effectiveness Committee. (1996 - 1999).
Committee Member, Search Committee for Science Educator. (1996 - 1997).
Committee Member, Alternate, Faculty Senate. (1994 - 1996).

Secretary, Committee on Committees (Faculty Senate). (1993 - 1994).


Chairperson, Departmental Search Committee for two Molecular Biologists. (1993).

Secretary, Wesley Foundation-UCCm Covenant Committee. (1992 - 1993).

Committee Member, Committee to Revise Biol. 3106. (1992).

Selection Committee, Outstanding Ex-Student (Univ.). (1992).

Committee Member, Teaching Committee, Mycological Society of America. (1989 - 1992).

Secretary, Biological Sciences, Graduate Faculty. (1985 - 1992).

Committee Member, Animal Resources Committee. (1990 - 1991).

Faculty Senate Representative, Faculty Senate Representative. (1990 - 1991).

Committee Member, NCATE Proposal Committee. (1990 - 1991).

Committee Member, University Mini-Grant Committee. (1990 - 1991).

Committee Member, VPAA Search Committee. (1990 - 1991).


Faculty Senate Representative, Faculty Senate Representative. (1988 - 1989).


Program Organizer, Homecoming, Biological Sciences. (1987).

Faculty Senate Representative, Faculty Senate Representative, Biological Sciences. (1985 - 1987).

Committee Member, President's Advisory Committee on Women. (1985 - 1987).

Recorder, President's Advisory Committee on Women. (1985 - 1987).


Chairperson, College of Science Honors Program. (1981 - 1987).

Committee Member, Biological Sciences Scholarship Committee. (1985 - 1986).

Chairperson, Biological Sciences Graduate Program Task Force. (1985).

Chairperson, Faculty Senate Nominating Committee. (1985).

Committee Member, Library Self-Study Committee. (1985).
Committee Member, Top Ten Seniors Selection Committee. (1985).

Faculty Mentor, Executive Council Faculty Senate. (1982 - 1984).

Chairperson, Biological Sciences Graduate Faculty. (1981 - 1984).

Committee Member, Ad Hoc Committee on Merit Evaluation. (1983).

Program Coordinator, United Way, Biological Sciences. (1982).

Faculty Advisor, Advisor for Provisional Students. (1981 - 1982).

Representative, Graduate Council. (1979 - 1982).


Committee Member, Dean's Committee for Homecoming. (1980).

Committee Member, M.S. in Microbiology Committee. (1980).

Committee Member, B.S. in Microbiology Committee. (1976 - 1980).

Chairperson, Reservations, Regional Microbiology Meeting. (1972 - 1980).

Chairperson, Ad Hoc Committee for Biological Sciences Catalog. (1979).

Chairperson, CARPE Hearing for Lynda Schmidt. (June 18, 1979).

Faculty Mentor, Faculty Senate Ad Hoc Committee to Evaluate Administrators. (1978).


Committee Member, President's Committee to Select Dean of Engineering. (1976 - 1977).


Secretary, Bookstore and Union Committee (Faculty Council). (1973 - 1976).

Committee Member, Biological Sciences Graduate Student Advisory Committee. (1972 - 1976).


Committee Member, Inquiry Committee for Glenda Gill, CARPE. (1974).

Committee Member, UTEP Purpose Subcommittee. (1974).

Program Coordinator, Campus Ministry. (1973 - 1974).

Faculty Mentor, Council Representative for Biological Sciences. (1972 - 1974).

Program Coordinator, Developmental Biology and Experimental Embryology. (1972 - 1974).

Committee Member, Ad Hoc Faculty Council Committee to Communicate with the Chancellor. (1973).
Committee Member, Dean of Science committee to Evaluate the Health Allied Professions. (1973).


Committee Member, Departamental Search Committee for Microbiologist. (1972).


**Professional Service**

Providence-Sierra Hospital and Thomason Hospital.

West Texas Regional Poison Center. (1999 - Present).


Officer, President/Elect/Past, Texas Society for Microscopy and Judge of Student Presentations. (2007 - 2008).

Officer, President/Elect/Past, Texas Society for Microscopy. (2006 - 2007).

Officer, President/Elect/Past, Texas Society for Microscopy. (2005 - 2006).

Committee Member, Mycological Society of America. (2002 - 2003).


Committee Chair, Edowment Committee/Mycological Society of America. (1998 - 2001).

Committee Chair, Mycological Society of America /Endowment Committee. (1998 - 2001).

Committee Chair, Mycological Society of America. (1997).


**Awards and Honors**

**Service, Professional**

American Men and Women of Science, American Men and Women of Science.


Outstanding Educators of America, Outstanding Educators of America. (1975).

**Service, University**

Outstanding Woman Faculty, University of Texas at El Paso. (1969).
Dr. Kristine M. Garza  
The University of Texas at El Paso  
Biological Sciences  
(915) 747-6562  
Email: kgarza@utep.edu

Education

Ph D, University of Virginia, 1998.  
Major: Microbiology

BS, St. Mary's University, 1991.  
Major: Biology

Professional Positions

Academic - Post-Secondary

Associate Professor, University of Texas at El Paso. (September 2006 - Present).

Assistant Professor, University of Texas at El Paso. (August 2000 - August 2006).

Professional


Professional Memberships


Development Activities Attended


"Leptin and optimal dendritic cell function," California State University at San Marcos. (February 26, 2009).


Seminar, "Writing an Effective Abstract," SACNAS Conference. (October 12, 2008).


Seminar, "Graduate Students that Have Marketable and Life-long Intellectual Skills that Meet the Career Challenges of the 21st Century." (February 28, 2008).

**Awards and Honors**

UTEP's Center for Hispanic Entrepreneurship Fellow (CfHE Fellow). (2010).

Distinguished Achievement Award in service to the College of Science. (2009).

UTEP's Center for Hispanic Entrepreneurship Fellow (CfHE Fellow). (2009).

Jack Bristol distinguished Achievement Award in Teaching. (2008).


UTEP's Center for Hispanic Entrepreneurship Fellow (CfHE Fellow). (2008).


AAI Minority Scientist Travel Award. (2006).

Appointed to the Minority Affairs Committee for the American Association of Immunology. (2005).

Fellow for the Center for Effective Teaching and Learning (CETaL) at UTEP. (2005).


FASEB/MARC Mentor/Minority Trainee Travel Award. (2004).

Fellow of the IMPACT and Leadership summer Institute. (2004).


Sigma Xi-UTEP Chapter President. (2004).

Sigma Xi-UTEP Chapter President. (2003).

AAI Minority Scientist Travel Award. (2002).

Inducted into the UTEP Chapter of Sigma-Xi, the Scientific Research Society. (2001).

SACNAS Junior Faculty Travel Award. (2001).

Michael J. Peach Outstanding Graduate Student Award. (1997).


Minority access to Research Careers Fellow. (1989).
National Science Foundation Recognition Award. (1989).

TEACHING

Teaching Experience

The University of Texas at El Paso

BIOL 3414, Molecular Cell Biology, 12 courses.
BIOL 4198, Special Problems, 1 course.
BIOL 4298, Special Problems, 2 courses.
BIOL 4398, Special Problems, 4 courses.
BIOL 5301, Select Adv Topics Biol Science, 2 courses.
BIOL 5302, Resrch Biological Science, 2 courses.
BIOL 5398, Thesis, 1 course.
BIOL 5399, Thesis, 2 courses.
BIOL 6390, Independent Research, 6 courses.
BIOL 6399, Dissertation, 6 courses.
BIOL 6490, Independent Research, 4 courses.
BIOL 6590, Independent Research, 3 courses.

Directed Student Learning

Supervised Research. (October 1, 2009 - Present).
  Advised: Kristina Barron

Dissertation Committee Chair. (September 1, 2009 - Present).
  Advised: Amanda Gonzales

Other. (June 1, 2009 - Present).
  Advised: Victoria Ochoa

Supervised Research. (June 1, 2009 - Present).
  Advised: Valerie Granados

Other. (January 1, 2009 - Present).
  Advised: Zaineb Aldawhi

Other. (August 1, 2008 - Present).
  Advised: Jeffrey Sivils

Undergraduate Honors Thesis. (June 1, 2008 - Present).
  Advised: Leonardo Estrada

Undergraduate Honors Thesis. (June 1, 2008 - Present).
  Advised: Yadira Arellano

Dissertation Committee Chair. (January 1, 2008 - Present).
  Advised: Raquel Suro
Dissertation Committee Chair. (September 1, 2007 - Present). 
Advised: Lorena De los Santos

Master's Thesis Committee Member. (December 14, 2009). 
Advised: Tenoch Benitez

Master's Thesis Committee Chair. (December 10, 2009). 
Advised: John Rosskopf

Dissertation Defense Committee Member. (December 2, 2009). 
Advised: Israel Garcia-Martinez

Master's Thesis Committee Member. (November 24, 2009). 
Advised: Brenda Machao

Master's Thesis Committee Chair, "Obesity concentrations of leptin alter dendritic cell morphology enhancing migration." (August 4, 2009). 
Advised: Christine Delgado

Advised: Miguel Arellano

Dissertation Defense Committee Chair, "A possible implication for leptin-induced signaling as a negative regulator of dendritic cell function." (July 24, 2009). 
Advised: Oscar Ramirez

Advised: Christine Delgado

Advised: Juan Reyna

Master's Thesis Committee Member, "Comparative cytotoxicity assessments of some manufactured and anthropogenic nanoparticulate materials." (April 5, 2007). 
Advised: Karla Fabiola Soto

Master's Thesis Committee Chair, "Assessing the effects of TNF-alpha on dendritic cells." (July 21, 2006). 
Advised: Armando Estrada

Advised: Alonso Andrade

Advised: Mauricio Salicru

RESEARCH
Published Intellectual Contributions

Refereed Journal Articles


Conference Proceedings


Other


Invited Presentations

Garza, K. M. (Presenter Only), Gender and Communication: Issues in the Academic Work Place, "panel presentation by Associate Professors," NSF Advance (Creating Community Initiative), UTEP. (October 9, 2009).


**Contributed Presentations**

Garza, K. M. (Author Only), De los Santos, L. (Presenter & Author), American Society of Cell Biologists Annual Conference, "Effects of DPNQ on primary T cell activation," ASCB, San Diego, California. (December 5, 2009).

Garza, K. M. (Author Only), Suro, R. M. (Presenter & Author), American Society of Cell Biologists Annual Conference, "Inhibition of T cell activation by 2,3-diphenyl-1,4-naphthoquinone (DPNQ) and its potential mechanism of action," ASCB, San Diego, California. (December 5, 2009).

Garza, K. M. (Author Only), Suro, R. M. (Presenter & Author), SACNAS Annual Conference: Improving the Human Condition - Challenges for Interdisciplinary Science, "Chronic in vitro exposure to carbonaceous nanoparticles hinders the ability of macrophages to respond to inflammatory stimuli," SACNAS, Dallas, Texas. (October 16, 2009).


Garza, K. M. (Author Only), Suro, R. M. (Presenter & Author), Avila, A. (Author Only), Esparza, D. (Author Only), Rio Grande Branch of the American Society of Microbiologists, "Inhibition of T cell activation by 2,3-diphenyl-1,4-naphthoquinone (DPNQ) and its potential mechanism of action," ASM, Las Cruces, New Mexico. (February 27, 2009).


Garza, K. M., De los Santos, L., Suro, R., Avila, A., Annual SACNAS Conference, "Inhibition of T cell activation by 2, 3-diphenyl-1, 4-naphthoquinone is not mediated by anergy," Salt Lake city, UT. (October 12, 2008).

Garza, K. M., Suro, R., De los Santos, L., Annual SACNAS Conference, "Inhibition of T cell activation by 2,3- diphenyl-1, 4-napthoquinone (DPNQ) and the induction of regulatory T cells," Salt Lake City; UT. (October 12, 2008).

Garza, K. M., Arellano, Y., Ramirez, O., Annual SACNAS Conference, "Leptin enhances dendritic cell survival but does not promote proliferation," Salt City, UT. (October 12, 2008).


Garza, K. M., American Chemical society 2008 Meeting and Exposition, division of environmental chemistry witha focus on nanoparticles, "Cytotoxicity and inflammation in response to manufactured metal oxides and carbon nanoparticulate materials.," New orleans, LA. (April 9, 2008).

Garza, K. M., De Los Santos, L., Suro, r., Rio Grande Branch of the American Society for Microbiologists, "2,3-diphenyl-1,4-napthoquinone inhibits T cell activation," Alburquerque, NM. (February 16, 2008).


Contracts, Grants and Sponsored Research

Grant

Aley, Stephen B (Principal), Garza, Kristine M (Co-Principal), "Dissemination of an Established Mentor-Mentee Curriculum to Enhance Undergraduate STEM Research," Federal.
Lougheed, Vanessa L (Principal), Garza, Kristine M (Co-Principal), "URM Proposal: Mentoring of minority undergraduate research focused on the ecology of disease in the US-Mexico borderlands," Federal, $650,007.00. (September 1, 2009 - August 31, 2014).

Gosselink, Kristin (Supporting), Natalicio, Diana S (Principal), Kirken, Robert A (Supporting), Garza, Kristine M (Supporting), Aguilera, Renato (Supporting), Almeida, Igor C (Supporting), Johnson, Kyle L (Supporting), Das, Siddhartha (Supporting), Ellzey, Joanne T (Supporting), Walsh, Elizabeth A (Supporting), Han, Kyung-An (Supporting), "Border Biomedical Research Center," Federal, $1,400,000.00. (June 1, 2009 - May 31, 2014).

Garza, Kristine M (Principal), Aley, Stephen B (Co-Principal), Maldonado-Medina, Rosa A (Co-Principal), "Curricular and Team Research in Biomedical Sciences," Foundation. (September 1, 2009 - August 31, 2013).


Research

Leung, Ming-Ying, Natalicio, Diana S (Principal), Kirken, Robert A (Co-Principal), Garza, Kristine M (Co-Principal), "Bioinformatics Computing Core Facility," Federal, $279,605.00. (June 7, 2009 - June 30, 2014).

Sponsored Research

Aley, Stephen B (Principal), Garza, Kristine M (Co-Principal), Maldonado-Medina, Rosa A (Co-Principal), "Development of Curricular and Team Research in Biomedicine", $1,500,000.00. (September 1, 2006 - August 31, 2010).

Research in Progress

"Improving Progression of Undergraduate Students into Graduate School" (On-Going)
Develop and implement strategies to increase laboratory research experiences for students with the intent of increasing the number of undergraduate students proceeding to post-graduate study.

SERVICE

Department Service

Committee Chair, Awards Committee. (January 1, 2008 - Present).
Committee Chair, Biological Sciences Advisory Board. (September 1, 2007 - Present).
Committee Chair, Space Allocation Committee. (August 1, 2007 - Present).
Committee Chair, TA/AI Committee. (August 1, 2007 - Present).
Program Director, The UTEP Summer REU Program in Molecular and Cellular Biology. (April 1, 2001 - Present).
Committee Member, Search Committee for a senior neurobiologist. (January 15, 2009 - July 31, 2009).

**University Service**

Committee Chair, Institutional Animal Care and Use Committee. (September 1, 2007 - Present).

Committee Member, Biological Safety Level 3 (BSL3). (August 1, 2006 - Present).

Committee Member, MARC Advisory Committee. (August 1, 2005 - Present).

Faculty Advisor, El Paso del Norte SACNAS Student Chapter. (2005 - Present).

Faculty Advisor, Minority Access to Research Careers Program. (January 1, 2001 - Present).

Attendee, Graduation, Graduation Ceremonies, Fall 2009. (December 12, 2009).

Committee Member, Women's Advisory Counsel to the President. (September 1, 2008 - August 31, 2009).

Committee Member, Search Committee for an Attending Veterinarian. (January 15, 2009 - June 30, 2009).

Committee Chair, Research Committee. (September 1, 2007 - June 30, 2009).


Faculty Mentor, UTEP Faculty Mentoring Program for Women. (2007 - 2008).

**Professional Service**

Officer, Secretary, Executive Committee (SACNAS), Santa Cruz, California. (January 2008 - Present).

Committee Member, Program Committee (SACNAS). (November 2007 - Present).

Committee Member, Minority Affairs Committee, American Association of Immunologists. (July 2007 - Present).

Member, Board of Directors (SACNAS), Santa Cruz, California. (January 2007 - Present).

Committee Chair, Student Presentations Committee (SACNAS). (January 2007 - Present).

Committee Chair, Student Program Committee (SACNAS). (January 2007 - Present).
Dr. Kristin L. Gosselink
The University of Texas at El Paso
Biological Sciences
(915) 747-6877
Email: kgosselink@utep.edu

Education

Ph D, University of California at Los Angeles, 2001.
   Major: Physiological Science

MS, University of California at Los Angeles, 1998.
   Major: Physiological Science

BA, Luther College, 1991.
   Major: Biology

Professional Positions

Academic - Post-Secondary

Assistant Professor, University of Texas at El Paso Department of Biological Sciences and
   Border Biomedical Research Center. (July 2005 - Present).

Associate Faculty, MiraCosta Community College, Department of Biology, Biotechnology
   Program. (October 2003 - June 2005).

Instructor, Mount St. Mary’s College, Department of Physical Therapy. (August 1999 - December
   1999).

Teaching Assistant, University of California Los Angeles Department of Physiological Science.

Teaching Assistant, Luther College, Department of Biology. (August 1990 - June 1991).

Tutor, Luther College, Department of Biology. (February 1991 - May 1991).

Professional

Postdoctoral Research Associate, The Salk Institute, La Jolla, California. (July 2001 - July 2005).

Mentor, University of California Los Angeles Center for Women and Men. (January 2000 - June
   2001).

Graduate Student Researcher, University of California Los Angeles Department of Physiological

Counseling Assistant, University of California Los Angeles College of Letters and Sciences.
   (September 1997 - June 1998).

Graduate Student Researcher, University of California Los Angeles Department of Physiological

Graduate Student Researcher, University of California Los Angeles Department of Physiological
Professional Memberships

Honorary Member, Alpha Epsilon Delta; Health Pre-professional Honor Society.
American Physiological Society.
Endocrine Society.
Golden Key International Honor Society.
Phi Kappa Phi National Honor Society.
Sigma Xi; Scientific Research Society.
Society for Neuroscience.

Development Activities Attended

Faculty Fellowship, "National Science Foundation ADVANCE IMPACT," University of Texas at El Paso. (2008 - 2009).

Workshop, "Leadership in the academic workplace," The University of Texas at El Paso. (November 2009).

Workshop, "Outreach forum on building STEM research and education capacity at Hispanic-serving institutions," National Science Foundation - QEM Network. (September 2009).

Workshop, "UTEP College of Science grant writing workshop," The University of Texas at El Paso - College of Science. (July 2009).

Tutorial, "ARRA Research Funding Opportunities - Orientation," ORSP. (February 27, 2009).

Mentoring program, "National Science Foundation Faculty Mentoring Program for Women," University of Texas at El Paso. (2005 - 2008).


Continuing Education Program, "Glucocorticoids and mood: Clinical manifestations, risk factors and molecular mechanisms," University of California at San Diego School of Medicine and the Diana Foundation. (June 2008).

Meeting with NIH-NIDDK Program Officers, "Funding opportunities and grantsmanship." (June 2008).

Seminar, "Texas Tech University Health Sciences Research Colloquium," Texas Tech University Health Sciences Center. (May 2008).

Workshop, "National Science Foundation CAREER Award grant writing," University of Texas at El Paso. (May 2008).


Workshop, "Howard Hughes Medical Institute Diversity in the Sciences," Howard Hughes Medical Institute. (January 2008).

Workshop, "National Science Foundation grant writing," University of Texas at El Paso. (January 2008).


Tutorial, "Course on surgical techniques and performance," Office of Research and Sponsored Programs/ Department of Veterinary Services. (February 2007).


Workshop, "Howard Hughes Medical Institute Diversity in the Sciences," Howard Hughes Medical Institute. (October 2006).

Retreat, "University of Texas at El Paso Neuroscience research and strategic planning retreat," University of Texas at El Paso. (May 2006).

TEACHING

Teaching Experience

The University of Texas at El Paso

BIOL 1306, Ornamental Biology, 1 course.
BIOL 2313, Human Anat/Physiology II (C), 4 courses.
BIOL 4198, Special Problems, 3 courses.
BIOL 4320, Endocrinology, 1 course.
BIOL 4395, Topics in Biology, 1 course.
BIOL 4398, Special Problems, 5 courses.
BIOL 5301, Select Adv Topics Biol Science, 1 course.
BIOL 5302, Resrch Biological Science, 4 courses.
BIOL 6304, Physiological Regulatory Mech, 1 course.
BIOL 6390, Independent Research, 3 courses.
BIOL 6398, Dissertation, 1 course.
BIOL 6490, Independent Research, 1 course.
BIOL 6690, Independent Research, 4 courses.
ZOOL 4384, Neurobiology, 1 course.

Non-Credit Instruction

New Course Development, 3 participants. (2009).

Guest Lecture, 20 participants. (September 30, 2009).

Guest Lecture, 111 participants. (September 14, 2009 - September 28, 2009).

Review Course, PACE, Medical Professions Institute, 16 participants. (February 2009 - March 2009).
Directed Student Learning

Dissertation Committee Member. (October 2008 - Present).
Advised: John Gorbet

Dissertation Committee Member. (October 2008 - Present).
Advised: Oscar Torres

Master's Thesis Committee Member. (October 2008 - Present).
Advised: Oscar Sanchez

Dissertation Committee Member. (September 2008 - Present).
Advised: Johanny Meneses

Dissertation Committee Member. (August 2008 - Present).
Advised: Cheryl Storer

Dissertation Committee Chair. (June 2008 - Present).
Advised: Mara Hall

Dissertation Committee Member. (May 2008 - Present).
Advised: Jose A. Garcia

Dissertation Committee Member. (January 2007 - Present).
Advised: Hugo Sandoval

Dissertation Committee Member. (January 2007 - Present).
Advised: Luis Natividad

Dissertation Committee Chair. (January 2006 - Present).
Advised: Jaidee K. Zavala

Advised: Andres Bolanos

Advised: Sergio Gotbeter

Dissertation Committee Member. (September 2008 - December 2009).
Advised: Lorena De Los Santos

Advised: Michelle Karam

Dissertation Committee Member. (November 2006 - December 2008).
Advised: Priya Venkatakrishnan

Master's Thesis Committee Member. (January 2007 - June 2008).
Advised: Lucet Talamas

Master's Thesis Committee Chair. (June 2006 - December 2007).
Advised: Samantha Chagra

Supervised Research. (June 2007 - August 2007).
Advised: Laura Torres
Advised: Susanne Van Weelden

Dissertation Committee Chair. (January 2006 - May 2007).
Advised: Diana P. Garrido

Dissertation Committee Member. (January 2006 - May 2007).
Advised: Shuwen Liang

Master's Thesis Committee Member. (November 2005 - December 2005).
Advised: Derik Budig

Awards and Honors

Orville E. Egbert, M.D. Endowed Chair, University of Texas at El Paso. (2009).

RESEARCH

Published Intellectual Contributions

Book Chapters


Refereed Journal Articles


**Conference Proceedings**


**Journal Articles**


**Other**


**Invited Presentations**

Gosselink, K., St. Norbert, St. Norbert College, Department of Biology, De Pere, Wisconsin. (March 2005).

Gosselink, K., Psi Beta (Psychology Honors), Mesa College, San Diego, California. (March 2004).

Gosselink, K., UWEC, University of Wisconsin at Eau Claire, Eau Claire, Wisconsin. (February 2004).

Gosselink, K., Psi Beta (Psychology Honors), Mesa College, San Diego, California. (October 2003).

Gosselink, K., Division of Pediatric Endocrinology, Department of Pediatrics, Oregon Health Sciences University, Portland, Oregon. (March 2001).

Gosselink, K., Jerry L. Petis Memorial Veteran’s Administration Hospital and Loma Linda University, Jerry L. Petis Memorial Veteran’s Administration Hospital and Loma Linda University, Loma Linda, California. (February 2001).

Gosselink, K., University of California Los Angeles ACCESS Program, “Presentation of the Eureka Endowment for Graduate Student Support to the Board of Visitors of the School of Medicine," University of California Los Angeles, Los Angeles, California. (March 1998).

Gosselink, K., Combined Endocrine Conference, University of California Los Angeles Division of Pediatric Endocrinology and Metabolism, Department of Pediatrics, Los Angeles, California. (September 1997).


Contributed Presentations


Gosselink, K. (Presenter Only), Advisory Committee Meeting, University of Texas at El Paso Border Biomedical Research Center, El Paso, Texas. (March 2006).

Gosselink, K. (Presenter Only), Research Seminar, University of Texas at El Paso, Department of Biological Sciences, El Paso, Texas. (October 2005).

Gosselink, K., Invited Presentation for the Minnesota State University Department of Biological Sciences, Minnesota State University, Mankato, Minnesota. (April 2005).

Gosselink, K. (Presenter & Author), Sawchenko, P. E. (Presenter & Author), Society for Neuroscience Annual Meeting, San Diego, California. (October 2004).


Gosselink, K., Fourth World Congress on Stress, Fourth World Congress on Stress, Edinburgh, United Kingdom. (2002).


Gosselink, K. (Presenter Only), University of California Los Angeles Annual Retreat, University of California Los Angeles, Lake Arrowhead, California. (April 2000).


**Contracts, Grants and Sponsored Research**

**Grant**

Gosselink, Kristin (Supporting), Irwin, Louis N (Principal), Byers, Donna (Co-Principal), "An Interleukin-Neuropeptide Axis in Olfactory Learning," Federal.


Gosselink, Kristin (Principal), "Neural pathways contributing to stroke in stress and hypertension," Federal.

Gosselink, Kristin (Supporting), Castaneda, Edward (Principal), Ferreira-Pinto, Joao B (Supporting), Wiebe, John S (Supporting), Cuadrado, Mary (Supporting), Cohn, Lawrence D (Supporting), Amastae, Jon (Supporting), Lieberman, Louis (Supporting), O'Dell, Laura E
(Supporting), Miranda-Arango, Manuel (Supporting), "UTEP DIDARP - Vulnerability Issues in Drug Abuse (VIDA)," Federal.

Gosselink, Kristin (Supporting), Natalicio, Diana S (Principal), Kirken, Robert A (Supporting), Garza, Kristine M (Supporting), Aguilera, Renato (Supporting), Almeida, Igor C (Supporting), Johnson, Kyle L (Supporting), Das, Siddhartha (Supporting), Ellzey, Joanne T (Supporting), Walsh, Elizabeth A (Supporting), Han, Kyung-An (Supporting), "Border Biomedical Research Center," Federal, $1,400,000.00. (June 1, 2009 - May 31, 2014).

Gosselink, Kristin (Supporting), Fuentes, Olac (Principal), "UTEP Summer REU Program – Applied Intelligence Systems," Federal, $315,000.00. (April 15, 2009 - March 31, 2012).

Gosselink, Kristin (Supporting), Cooke, Malcolm N (Principal), "Layered manufacture of bioactive porous TE scaffolds," Federal, $225,000.00. (September 1, 2008 - August 31, 2011).

Gosselink, Kristin (Principal), Kirken, Robert A (Supporting), Sakk, Erik (Co-Principal), Whittaker, Joseph A (Supporting), "A role for stress-induced modifications to the gonadotropin-releasing hormone (GnRH) system in prostate cancer," Federal, $50,000.00. (September 1, 2009 - August 31, 2010).

Gosselink, Kristin (Supporting), Martinez, Alejandro (Principal), "Chronic Anxiety: expression of ecto5'-Nucleotidase (eNT) and Adenosine Deaminase (ADA) in amygdala and prefrontal cortex," Other, $10,000.00. (October 4, 2008 - October 3, 2009).

**Sponsored Research**

Gosselink, Kristin (Principal), "Brain pathways that integrate responses to stress and exercise," The University of Texas at El Paso, $6,000.00. (December 1, 2007 - November 30, 2008).

**Awards and Honors**

Travel award, NIH, RCMI. (December 2008).

**Research in Progress**

"Cellular proliferation and signal pathway induction by bioassayable growth hormone" (On-Going)
A clonal chondrogenic cell line will be stimulated with samples containing bioassayable growth hormone to determine the activity levels and mechanisms of action of this growth factor. These responses will serve as an assay for hormone activity in future studies designed to isolate and characterize the hormone, and identify its cognate receptor.

"Effects of hypertension and circadian cycle on stress responses and propensity for stroke" (On-Going)
Neuronal activation and vascular integrity in the brain will be determined following acute or repeated stress, applied early or late in the light cycle, in rats who are normal or have a pre-existing background of hypertension.

"Effects of reduced hypothalamic insulin signaling on subsequent stress responses" (Planning)
Viral knockdown of insulin receptors in the hypothalamus will be done in rats, who will then be subjected to acute or repeated stress. Brain neuropeptide expression, neuronal activation, and central and peripheral cytokine levels will be measured.

"Gender differences in stress processing" (On-Going)
Examining how acute and repeated stress are differentially processed in normal and ovariectomized females compared to males, in terms of hypothalamic neuronal activation.
"Layered Manufacture of Bioactive Porous TE Scaffolds" (On-Going)

"Stress-induced modulation of the GnRH system in prostate cancer" (On-Going)
Proliferative and metastasis gene expression profiles will be examined in prostate tissues from repeatedly stressed rats compared to rats recovering from repeated stress. Activation of hypothalamic GnRH and GABA neurons, and blood levels of gonadotropins, will also be investigated in these animals.

SERVICE

Department Service

Project Co-Leader, Border Biomedical Research Center, Neuroscience and Metabolic Disorders Project. (2008 - Present).

Member of the Graduate Faculty, Department of Biological Sciences. (2005 - Present).

Representative of the Department of Biological Sciences, Human Performance Research Cooperative. (2005 - Present).

Committee Member, Student Awards Committee. (2005 - Present).

Committee Chair, Border Biomedical Research Center, Neuroscience Faculty Search Committee. (2008 - 2009).

Alternate, Department of Biological Sciences, Faculty Senate. (2008 - 2009).

Interim Director, Border Biomedical Research Center, Neuroscience and Metabolic Disorders Unit. (2007 - 2008).

Committee Chair, Border Biomedical Research Center, Neuroscience Faculty Search Committee. (2006 - 2007).

College Service

Committee Member, Search Committee. (2008 - 2009).

Faculty Mentor, Medical Professions Institute. (August 9, 2009 - August 15, 2009).

Faculty Advisor, New Student Orientation. (July 29, 2009).

Faculty Advisor, New Student Orientation. (July 14, 2009).

Faculty Advisor, New Student Orientation. (June 23, 2009).

Attendee, Meeting, Pre-Commencement. (May 2009).

Faculty Coach for the College of Science, UTEP Women's Basketball. (February 19, 2009).

Team member, College of Science, Faculty and Staff Free Throw Shoot-Out. (February 11, 2009).
Committee Chair, Junior Faculty Ad-Hoc Committee on Tenure and Promotion Policies and Procedures. (2007 - 2008).

University Service

Vice-Chair, Faculty Senate Committee on Student Conduct. (2008 - Present).

Committee Member, Women's History Month Planning Committee. (2008 - Present).

Committee Member, Institutional Animal Care and Use Committee. (2005 - Present).

University Senate Service, Faculty Senate Committee on Student Conduct. (2007 - 2010).

Attendee, Graduation, Commencement. (December 2009).

Attendee, Graduation, Commencement. (May 2009).

Attendee, Graduation, Commencement. (May 2009).


Task Force Member, National Science Foundation Math-Science Partnership. (2005 - 2007).

Professional Service


Reviewer, Journal Article, Neuroscience.

Mentor for women graduate students in Neuroscience, Women in Neuroscience Committee of the Society for Neuroscience, Chicago, IL. (August 2009 - Present).

Online Mentor, MentorNet.net. (2009 - Present).

Member and Mentor, Minority Access Program of the Endocrine Society. (2008 - Present).


Member, Women in Physiology Committee of the American Physiological Society. (2009 - 2012).


**Public Service**


Guest Speaker, Women's Resource Center and Rainbow Miner Initiative, El Paso, TX. (November 2009).

Guest Speaker, Texas Tech Paul L. Foster School of Medicine, El Paso, TX. (June 2009 - August 2009).

Science fair judge, Sun Country Science Fair. (February 28, 2009).
Dr. Kyle L. Johnson
The University of Texas at El Paso
Biological Sciences
(915) 747-6889
Email: kljohnson@utep.edu

Education

Ph D, University of Colorado Health Sciences Center, 1994.
Major: Biophysics and Genetics
Dissertation Title: Genetic and biochemical analysis of poliovirus RNA amplification in mammalian cells

BS, University of Washington, 1985.
Major: Biology
Supporting Areas of Emphasis: Molecular and Cellular Biology

Professional Positions

Academic - Post-Secondary

Director, BBRC DNA Analysis Core Facility, The University of Texas at El Paso. (March 2007 - Present).

Faculty, Bioinformatics Program, The University of Texas at El Paso. (January 2007 - Present).

Member, Graduate Faculty, The University of Texas at El Paso. (January 2005 - Present).

Assistant Professor, The University of Texas at El Paso. (September 1, 2004 - Present).

Associate Scientist, Gregory Fleming James Cystic Fibrosis Research Center, University of Alabama at Birmingham. (January 2002 - August 2004).

Associate Member, Center for AIDS Research, University of Alabama at Birmingham. (January 2001 - August 2004).

Associate Scientist, Comprehensive Cancer Center, University of Alabama at Birmingham. (January 1999 - August 2004).

Research Assistant Professor, Department of Microbiology, University of Alabama at Birmingham. (November 1997 - August 2004).

Postdoctoral Fellow/Microbiology, University of Alabama at Birmingham. (April 1995 - November 1997).


Licensures and Certifications

Transportation of Dangerous Goods by Air Certification. (October 10, 2008 - October 10, 2010).

Professional Memberships

Member of Nodavirus Study Group, International Committee on the Taxonomy of Viruses. (2006 - Present).


**Development Activities Attended**

Workshop, ""Teaching Large Classes efficiently: Class Response Systems and Blackboard tools," UTEP's CETaL. (September 23, 2009).

Conference Attendance, "Eleventh Research Centers in Minority Institutions (RCMI) International Symposium on Health Disparities, Research Outcomes Accelerating Discoveries for Medical Applications & Practice (ROADMAP)," NIH. (December 1, 2008 - December 4, 2008).

Workshop, ""Publish and Flourish"," UTEP's CETaL. (November 21, 2008).


Workshop, ""Help! I'm Over the Top! Tools, Tips, and Techniques to Gain Control of an Academic Life"," UTEP's CETaL. (October 17, 2008).

2008 Fall Faculty Retreat, ""Teaching that Promotes Learning and Builds the Case of Teaching Excellence"," UTEP. (August 21, 2008).


Conference Attendance, "Western Regional Center of Excellence for Biodefense and Emerging Infectious Diseases Research (WRCE) Annual Meeting," UTMB/NIH. (September 27, 2007 - September 28, 2007).


Mentoring Program, "Faculty Mentoring Program for Women," UTEP ADVANCE. (September 1, 2005 - May 15, 2007).


Conference Attendance, "First International Conference on Viral Nervous Necrosis of Fish (VNN 2006)." (November 28, 2006 - December 1, 2006).


2005 Fall Faculty Retreat, ""So - What’s the Problem? Designing challenges for students as they learn to think in the discipline"," UTEP. (August 15, 2005).


2004 Fall Faculty Retreat, ""How Do We Really Know What Our Students Are Learning? Teaching and Assessing for Deep Learning"," UTEP. (August 19, 2004).

Awards and Honors

NSF ADVANCE Fellow, IMPACT Leadership Seminar, UTEP, UTEP. (May 15, 2005).

TEACHING

Teaching Experience

The University of Texas at El Paso
BIOL 4198, Special Problems, 2 courses.
BIOL 4298, Special Problems, 1 course.
BIOL 4398, Special Problems, 6 courses.
BIOL 5301, Select Adv Topics Biol Science, 2 courses.
BIOL 5302, Resrch Biological Science, 4 courses.
BIOL 5398, Thesis, 1 course.
BIOL 5399, Thesis, 2 courses.
BIOL 6390, Independent Research, 3 courses.
BIOL 6590, Independent Research, 1 course.
MICR 3443, Pathogenic Microbiology, 10 courses.
MICR 4351, General Virology, 1 course.

Directed Student Learning

Supervised Research. (August 2009 - Present).
  Advised: Courtney Halow

Supervised Research. (June 2009 - Present).
  Advised: Karla Frietze
Dissertation Committee Member. (April 2009 - Present).
   Advised: Jeffrey Kugelman

Dissertation Committee Chair. (August 2008 - Present).
   Advised: Vincent U. Gant, Jr.

Master's Thesis Committee Member, "Interaction of the Cellular SUMOylation System with Influenza A Virus and its Non-structural Protein NS1 (NS1A)." (January 2008 - Present).
   Advised: Sangita Pal

Dissertation Committee Member. (August 2007 - Present).
   Advised: Sudheer Molugu

Dissertation Committee Member. (July 2007 - Present).
   Advised: Jeffrey Sivils

Dissertation Committee Member. (August 2006 - Present).
   Advised: Swati Muhkerjee

Supervised Research. (June 2009 - December 2009).
   Advised: Krista Bermejillo

Master's Thesis Committee Member. (January 2009 - December 2009).
   Advised: Ana Betancourt

   Advised: John J. Rosskopf

Dissertation Committee Member, "A possible implication for leptin-induced signaling as a negative regulator of dendritic cell function." (August 2009).
   Advised: Oscar Ramirez

   Advised: John H. Upton III

Supervised Research. (July 2009).
   Advised: Joshua Frederick

   Advised: Amanda Adams

   Advised: Jennifer Valdez

   Advised: Alexandria E. Melendez

   Advised: Elisa Morales

   Advised: Christine Guise
Supervised Research. (June 2008 - December 2008).  
Advised: Lizette Rodarte

Supervised Research. (June 2008 - August 2008).  
Advised: Vincent U. Gant, Jr.

Advised: Elizabeth Gamez

Advised: Kimberly S. Hogle

Dissertation Committee Chair, ""Nonylphenol activates the constitutive androstane receptor and causes sexually dimorphic changes in P450 Expression."" (May 2008).  
Advised: Juan P. Hernandez

Advised: Diondra Harris

Advised: Eloisa Molina

Supervised Research. (June 2007 - December 2007).  
Advised: Enrique Roman

Supervised Research. (June 2007 - August 2007).  
Advised: Lisa Esparza

Advised: Karen Van Sickle

Advised: Lorena De Los Santos

Advised: Steve E. Campos

Advised: Veronica E. Calderon

Supervised Research. (January 2006 - December 2006).  
Advised: Linda Herrera

Supervised Research. (June 2006 - August 2006).  
Advised: April P. Kelly

Supervised Research. (June 2006 - August 2006).  
Advised: Yu-Hsiang (Danny) Wang

Supervised Research. (January 2006 - August 2006).  
Advised: Chad D. Stenhouse

Supervised Research. (January 2006 - August 2006).  
Advised: John J. Rosskopf
Advised: Samantha L. Moorhead

Advised: Candice Chavez

Advised: Loren C. Fuentes

Advised: Nam K. Tonthat

Advised: Brandon S. Elrod

Advised: Nina Badoe

Advised: Telma Garcia-Hernandez

Advised: Luis M. Aguirre-Palma

Advised: Mayte Yichoy

RESEARCH

Published Intellectual Contributions

Book Chapters


Refereed Journal Articles


Conference Proceedings


Invited Presentations


Johnson, K. L. (Presenter & Author), BBRC Colloquium, The University of Texas at El Paso, Department of Biological Sciences and Border Biomedical Research Center, "Role of RNA structure in viral RNA replication and development of RNA replicon vaccines," El Paso, TX. (September 18, 2009).

Taufer, M. (Presenter & Author), Leung, M.-Y. (Author Only), Johnson, K. L. (Author Only), Solorio, T. (Author Only), Licon, A. (Author Only), Mireles, D. (Author Only), Araiza, R.


Contributed Presentations


Rosskopf, J. J. (Presenter & Author), Melendez, A. E. (Author Only), Leung, M.-Y. (Author Only), Johnson, K. L. (Author Only), The Annual Meeting of the Rio Grande Branch of the American Society for Microbiology, "An RNA structure at the 3' end of Nodamura virus RNA1 plays a key role in its replication," ASM, New Mexico State University, Las Cruces, NM. (February 27, 2009).


Johnson, K. L. (Presenter & Author), Western Regional Center of Excellence for Biodefense and Emerging Infectious Diseases Research (WRCE) Annual Meeting, "Nodavirus-based RNA replicon vaccines for tick-borne encephalitis virus," Galveston, TX. (September 27, 2007).


Taufeer, M. (Author Only), Leung, M.-Y. (Author Only), Johnson, K. L. (Author Only), Licon, A. (Presenter & Author), Tungjatoonrusamee, P. (Author Only), Dayal, Y. (Author Only), Catarino, D. (Author Only), Lei, H. (Author Only), Bioinformatics Annual Poster Session 2006,


Johnson, K. N. (Presenter & Author), Price, B. D. (Author Only), Eckerle, L. D. (Author Only), Johnson, K. L. (Author Only), Albariño, C. G. (Author Only), Ball, L. A. (Author Only), Society for Invertebrate Pathology (SIP) Thirty-fourth Annual Meeting, The Israeli-Dutch Meeting,


Johnson, K. L. (Presenter & Author), Sarnow, P. (Author Only), Seventh Meeting of the European Study Group on the Molecular Biology of Picornaviruses, "Genetic and biochemical analysis


Media Contributions

Newspaper


The El Paso Times. (May 27, 2009).


Radio

KTEP Science Studio. (May 1, 2009).

TV

KVIA. (October 10, 2009).

Contracts, Grants and Sponsored Research

Educational


Equipment

Johnson, Kyle L (Co-Principal), Bernal, Ricardo A (Principal), Xiao, Chuan (Co-Principal), Noveron, Juan C (Co-Principal), Chianelli, Russell R (Co-Principal), Das, Siddhartha (Supporting), Cox, Marc B (Supporting), "MRI: Acquisition of a Field Emission Gun Transmission Electron Microscope for Biological Structure Determination," Federal, $1,259,954.00. (August 1, 2009 - July 31, 2012).

Grant

Gosselink, Kristin (Supporting), Natalicio, Diana S (Principal), Kirken, Robert A (Supporting), Garza, Kristine M (Supporting), Aguilera, Renato (Supporting), Almeida, Igor C (Supporting), Johnson, Kyle L (Supporting), Das, Siddhartha (Supporting), Elzey, Joanne T (Supporting), Walsh, Elizabeth A (Supporting), Han, Kyung-An (Supporting), "Border Biomedical Research Center," Federal, $1,400,000.00. (June 1, 2009 - May 31, 2014).
Sponsored Research

Johnson, Kyle L (Supporting), Natalicio, Diana S (Principal), "Border Biomedical Research Center," Federal, $487,912.00. (June 1, 2009 - May 31, 2014).


Johnson, Kyle L (Principal), Leung, Ming-Ying (Co-Principal), "Use of Molecular and Genetic Tools to Examine the Role of RNA Structure in Viral RNA Replication," State, $200,000.00. (May 2010 - April 2012).

Johnson, Kyle L (Co-Principal), Walker, David (Principal), Aguilera, Renato (Principal), Rosas-Acosta, German (Co-Principal), "Western Regional Center for Biodefense and Emerging Infectious Diseases Research (U54 AI057156). Subproject title: Development of Assays for Discovery of Novel Anti-Viral/Anti-Bacterial Compounds," Federal, $475,391.00. (September 2009 - May 2011).

Johnson, Kyle L (Principal), Aguilera, Renato (Principal), "MBRS-SCORE Program at the University of Texas at El Paso. Sub-project title: Nodavirus-based vaccines for West Nile virus," Federal, $200,000.00. (June 1, 2007 - May 31, 2011).


Johnson, Kyle L (Principal), Walker, David (Principal), "Western Regional Center for Biodefense and Emerging Infectious Diseases Research (U54 AI057156). Subproject title: Supplement to nodavirus-based RNA replicon vaccines for tick-borne encephalitis virus," Federal, $75,000.00. (June 1, 2009 - February 28, 2010).

Johnson, Kyle L (Principal), Walker, David (Principal), "Western Regional Center for Biodefense and Emerging Infectious Diseases Research (U54 AI057156). Subproject title: Nodavirus-based RNA replicon vaccines for tick-borne encephalitis virus," Federal, $250,000.00. (September 1, 2006 - February 28, 2009).


Awards and Honors


University Research Institute (URI) Award, UTEP, UTEP. (2005).

ASV Travel Grant to attend the XIth International Congress of Virology in Sydney, Australia, ASV. (1999).

Postdoctoral Travel Fellowship, ASV, ASV. (1996).

Postdoctoral Trainee, Institutional National Research Service Award, Public Health Service, Department of Health and Human Services, NIH. (1994).

Student Research Award, University of Colorado Health Sciences Center. (1993).

Student Research Award, University of Colorado Health Sciences Center. (1992).


Honorable Mention, National Science Foundation Graduate Fellowship Competition, NSF. (1988).

Predoctoral Fellowship, Molecular Biology Program, University of Colorado Health Sciences Center. (1987).

**Intellectual Contributions in Submission**

**Refereed Journal Articles**


**Research in Progress**

"Mathematical Models for RNA" (On-Going)

The major goals of this project are to develop mathematical models for accurate and consistent prediction of RNA secondary structures in large RNA molecules and to test the validity of the predicted structures by mutagenesis experiments using the genomes of nodaviruses as models.

"Nodavirus-based RNA replicon vaccines for tick-borne encephalitis virus" (On-Going)

The major goal of this project is to develop candidate vaccines that are protective against tick-borne encephalitis in mice.

"Nodavirus-based vaccines for West Nile virus" (On-Going)

The major goals of this project are to develop novel vaccine candidates for West Nile virus and to test their immunogenicity in mice.

"Probabilistic Models for Inversions in Viral RNA Sequences" (On-Going)

The major goals of this project are to establish the probability distributions for inversion patterns in random RNA sequences and establish statistical criteria by which sequence segments can be sampled for accurate secondary structure prediction.

"RNA replication and its control by host cellular defenses" (On-Going)

The major goal of this project is to define the role of host cellular defenses in controlling RNA replication, thereby regulating viral infections.

"Use of Molecular and Genetic Tools to Examine the Role of RNA Structure in Viral RNA Replication" (On-Going)

The major goal of this project is to combine RNA secondary structure prediction with molecular and genetic tools that will allow us to determine the role of RNA structure in replication of nodavirus genomic RNAs.
SERVICE

Department Service

Committee Member, BSL-3 Steering Committee. (September 1, 2008 - Present).

Committee Member, TA Committee. (September 1, 2008 - Present).

Committee Member, Awards Committee. (September 1, 2005 - Present).

Committee Member, Ecology and Evolutionary Biology Doctoral Proposal Committee. (September 1, 2005 - Present).

Committee Chair, BSL-3 Steering Committee. (September 1, 2006 - August 31, 2008).

Liaison to the library, Library Liaison. (October 1, 2004 - May 15, 2008).

Committee Member, Bacteriologist/Parasitologist Search Committee. (September 1, 2007 - March 1, 2008).

Committee Member, Molecular Biology and Biochemistry Ph.D. Qualifying Exam Committee. (September 1, 2005 - May 31, 2006).

Committee Member, Microbiologist/Virologist Search Committee. (September 1, 2005 - March 1, 2006).

University Service

University Senate Service, Faculty Senate. (September 1, 2008 - Present).

Vice-Chair, Institutional Biosafety Committee (IBC). (January 25, 2006 - Present).

Attendee, Graduation. (December 12, 2009).

Attendee, Award Ceremony, College of Science Pre-Commencement. (December 4, 2009).

Attendee, Graduation. (May 16, 2009).

Attendee, Award Ceremony, College of Science Pre-Commencement. (May 8, 2009).

Attendee, Graduation. (December 13, 2008).

University Senate Service, Faculty Senate Alternate. (September 1, 2006 - August 31, 2008).

Attendee, Graduation. (May 10, 2008).

Attendee, Award Ceremony, College of Science Pre-Commencement. (May 1, 2008).

Attendee, Award Ceremony, College of Science Pre-Commencement. (December 7, 2007).

Attendee, Graduation. (May 12, 2007).

Attendee, Award Ceremony, College of Science Pre-Commencement. (May 12, 2007).

Attendee, Graduation. (May 13, 2006).
Attendee, Award Ceremony, College of Science Pre-Commencement. (May 4, 2006).
Attendee, Graduation. (December 10, 2005).
Attendee, Award Ceremony, College of Science Pre-Commencement. (December 1, 2005).
Attendee, Graduation. (May 7, 2005).
Attendee, Award Ceremony, College of Science Pre-Commencement. (April 28, 2005).
Attendee, Graduation. (December 11, 2004).
Attendee, Award Ceremony, College of Science Pre-Commencement. (December 2, 2004).

**Professional Service**

Committee Member, American Society for Virology/Membership Committee, Toledo, OH. (August 1, 2008 - Present).
Committee Member, International Committee on the Taxonomy of Viruses (ICTV)/Nodavirus Study Group. (2006 - Present).
Invited Lecture, Bioinformatics Colloquium, The University of Texas at El Paso, El Paso, TX. (October 9, 2009).
Invited Lecture, BBRC Colloquium, The University of Texas at El Paso, Department of Biological Sciences and Border Biomedical Research Center, El Paso, TX. (September 18, 2009).
Reviewer, Grant Proposal, Israeli Science Foundation (ISF). (March 2009).
Reviewer, Grant Proposal, NSF. (September 2007).
Guest Speaker, BBRC Site Visit, The University of Texas at El Paso, El Paso, TX. (August 28, 2007).
Committee Member, BBRC Advisory Board Meeting, The University of Texas at El Paso, El Paso, TX. (March 8, 2007).
Committee Member, American Society for Microbiology (ASM)/Rio Grande Branch/Local Organizing Committee, El Paso, TX. (February 2006 - January 2007).
Invited Lecture, Kyoto University, Kyoto. (December 4, 2006).
Invited Lecture, Hiroshima University, Hiroshima. (November 27, 2006).
Invited Lecture, New Mexico State University, Las Cruces, NM. (April 6, 2006).
Guest Speaker, BBRC Advisory Board Meeting, The University of Texas at El Paso, El Paso, TX. (March 1, 2006).

Public Service

Science Fair Judge, Da Vinci School for Science and the Arts Science Fair, El Paso, TX. (December 12, 2008).
Guest Speaker, Visit to UTEP by Senator Kay Bailey Hutchison, El Paso, TX. (October 10, 2006).
Guest Speaker, Student Health Service, UTEP, El Paso, TX. (May 12, 2006).
Science Fair Judge, Ascarate Elementary School’s 3rd-6th Grade Science Fair, El Paso, TX. (November 10, 2005).
Science Fair Judge, Fannin Elementary School Science Fair, El Paso, TX. (March 3, 2005).

Awards and Honors

Service, Professional

Dr. Robert A. Kirken  
The University of Texas at El Paso  
Biological Sciences  
(915) 747-5844  
Email: rkirken@utep.edu

Education

Postdoctoral Research Fellowship, National Institutes of Health/National Cancer Institute, 1996.  
Major: Cytokine Molecular Mechanisms Section  
Supporting Areas of Emphasis: Immunology

Ph D, Wright State University, 1991.  
Major: Biomedical Sciences

BA, Olivet College, 1986.  
Major: Biochemistry

Professional Positions

Academic - Post-Secondary

Professor and Chair, The University of Texas at El Paso. (September 1, 2005 - Present).

Visiting Professor, The University of Texas at Houston Medical School. (2005 - Present).

Associate Professor, The University of Texas at Houston Medical School. (2004 - 2005).

Adjunct Assistant Professor, The University of Texas at Houston M.D. Anderson Cancer Center. (2002 - 2005).

Adjunct Professor, The University of Texas at Houston Medical School. (2001 - 2005).

Assistant Professor, The University of Texas at Houston Medical School. (1998 - 2004).


Professional Memberships


Awards and Honors

Commencement Speaker, Olivet College. (1986).
President, Olivet College Chapter of the ACS, American Chemical Society. (1985).

Student Senate Representative, Olivet College. (1985).


**TEACHING**

**Teaching Experience**

**The University of Texas at El Paso**

BIOL 4192, Senior Seminar, 12 courses.

BIOL 4298, Special Problems, 1 course.

BIOL 4398, Special Problems, 5 courses.

BIOL 6398, Dissertation, 1 course.

BIOL 6399, Dissertation, 3 courses.

BIOL 6690, Independent Research, 4 courses.

**Directed Student Learning**

Dissertation Committee Member. (2009 - Present).

Advised: Johanny Meneses

Other. (2009 - Present).

Advised: Georgialina Rodriguez

Other. (2009 - Present).

Advised: Stephen Martinez

Other. (2007 - Present).

Advised: Jeremy Ross

Dissertation Committee Chair. (2006 - Present).

Advised: Abhisek Mitra

Other. (2003 - Present).

Advised: Zsuzsanna Nagy

Other. (2009).

Advised: Hadit Morales

Other. (2009).

Advised: John Wilson

Other. (2009).

Advised: Juan Becerra

Other. (2009).

Advised: Justine Murray


Advised: Jason Meyer


Advised: Mathew Gaynor
Advised: Christina Gutierrez

Advised: Georgialina Rodriguez

RESEARCH

Published Intellectual Contributions

Books


Refereed Journal Articles


Other


Contributed Presentations


Contracts, Grants and Sponsored Research

Contract

Borrok, David (Co-Principal), Kirken, Robert A (Principal), Miller, Richard T (Co-Principal), "TASK 15: IATCS coolant support phase I: Degradation of OPA (part 2)," Industry, $135,720.00. (June 1, 2009 - October 1, 2009).

Educational

Kirken, Robert A (Co-Principal), "University of Texas at Houston, Summer Research Grant Proposal," Federal.

Equipment

Aguilera, Renato (Principal), Kirken, Robert A (Co-Principal), "Addition of Confocal Microscope to Cell Culture Core," State, $200,000.00. (January 27, 2009 - July 1, 2009).

Aguilera, Renato (Principal), Kirken, Robert A (Co-Principal), "Addition of Fluorescence Microscope to Cell Culture Core," The University of Texas at El Paso, $70,000.00. (January 1, 2009 - May 1, 2009).
Gosselink, Kristin (Supporting), Natalicio, Diana S (Principal), Kirken, Robert A (Supporting), Garza, Kristine M (Supporting), Aguilera, Renato (Supporting), Almeida, Igor C (Supporting), Johnson, Kyle L (Supporting), Das, Siddhartha (Supporting), Elzey, Joanne T (Supporting), Walsh, Elizabeth A (Supporting), Han, Kyung-An (Supporting), "Border Biomedical Research Center," Federal, $1,400,000.00. (June 1, 2009 - May 31, 2014).

Gosselink, Kristin (Principal), Kirken, Robert A (Supporting), Sakk, Erik (Co-Principal), Whittaker, Joseph A (Supporting), "A role for stress-induced modifications to the gonadotropin-releasing hormone (GnRH) system in prostate cancer," Federal, $50,000.00. (September 1, 2009 - August 31, 2010).

Research


Kirken, Robert A (Co-Principal), Natalicio, Diana S (Principal), "Border Biomedical Research Center," Federal, $12,379,750.00. (July 1, 2009 - June 30, 2014).

Leung, Ming-Ying, Natalicio, Diana S (Principal), Kirken, Robert A (Co-Principal), Garza, Kristine M (Co-Principal), "Bioinformatics Computing Core Facility," Federal, $279,605.00. (June 7, 2009 - June 30, 2014).


Kirken, Robert A (Principal), "Jak3 as a Target for the Treatment of Leukemia," Foundation, $125,000.00. (February 1, 2010 - January 31, 2011).

Kirken, Robert A (Co-Principal), Natalicio, Diana S (Principal), "Border Biomedical Research Center - Bridge Funds," Federal, $480,362.00. (September 1, 2009 - August 30, 2010).

Kirken, Robert A (Principal), "Jak3 as a Target for the Treatment of Leukemia," Foundation, $235,000.00. (October 1, 2008 - May 30, 2010).

Kirken, Robert A (Supporting), Nagy, Zsuzsanna (Principal), "Role for Stat5 in Allograft Rejection," Federal, $150,000.00. (May 1, 2007 - April 30, 2010).

Kirken, Robert A (Principal), "Development of NC1153 as a Treatment for Cancer," Foundation, $135,000.00. (December 1, 2008 - November 30, 2009).


Kirken, Robert A (Principal), "NC1153 as a Novel Agent to Block Allograft Rejection," State, $50,000.00. (September 1, 2008 - August 30, 2009).

Kirken, Robert A (Principal), "Validation of a Putative Drug Target for the Treatment of Leukemia," Foundation, $100,000.00. (October 1, 2006 - September 30, 2007).

Awards and Honors

Young Investigator Travel Award, American Society of Transplant Surgeons. (1999).


Intramural Research Training Assistantship Award, National Institutes of Health. (1994).
Graduate Student Research Lecture Award, Wright State University, Sigma Xi. (1987).
Student Research Award, Olivet College, American Institute of Chemists. (1986).
Presidential Scholar Award for Academic Excellence, Olivet College. (1982).

Research in Progress

"Health disparities, psychiatric mental health nursing, nursing administration health care outcomes for the mentally ill" (On-Going)
Teaching focus in supervision, human relations, the principalship, and organizational behavior. Research interest in the principalship and assistant principalship, induction of new principals, and mentoring.

SERVICE

Department Service

Chair, Department of Biological Sciences.

College Service

Ambassador, Tour of Bioscience Research Building and Facilities - Hispanic Chamber of Commerce.


Student Recruitment, Tour of Bioscience Research Building and Facilities - UT System Administrators from the Chancellor's Office.


University Service

Advisor, UTEP - Biosciences Building Development.
Advisor, UTEP - Health Sciences Building Development.
Advisor, UTEP - Physical Science Building Development.
Liason, UTEP - REDCo; small pharma company recruitment.
Liason, UTEP - Texas Tech Faculty Recruitment and Program Development.
Program Organizer, UTEP - Texas Tech Research Day.

Task Force Member, UTEP - Texas Tech Task Force.

Professional Service

Committee Chair, RCMI Translational Research Network Core Lab Subcommittee. (2008 - Present).

Faculty Recruiter, Graduate School of Biomedical Sciences at Houston, Houston, TX. (2005 - Present).

Reviewer, Grant Proposal, Gulf Coast GI Pilot Grant Award Project at UTHSC. (2004 - Present).

Reviewer, Grant Proposal, New Investigator Grant Program at UTHSC. (2004 - Present).


Reviewer, Grant Proposal, NIH - NIDDK. (2005).


Public Service


Guest Speaker, North Loop Elementary School - Careers in Science. (2008).
Dr. Manuel Llano  
The University of Texas at El Paso  
Biological Sciences  
(915) 747-5844  
Email: mllano@utep.edu

Education

Ph D, Universidad Autonoma de Madrid, Spain, 2000.  
Major: Molecular Biology

MS, Universidad de La Habana, Cuba, 1992.  
Major: Clinical Biochemistry

M.D., Universidad de La Habana, Cuba, 1987.  
Major: Medicine

Professional Positions

Academic - Post-Secondary

Assistant Professor, University of Texas at El Paso. (August 23, 2006 - Present).

Research Associate, Mayo Clinic. (June 6, 2000 - August 22, 2006).

TEACHING

Teaching Experience

The University of Texas at El Paso

1 course.  
BIOL 4198, Special Problems, 1 course.  
BIOL 4398, Special Problems, 3 courses.  
BIOL 5302, Resrch Biological Science, 1 course.  
BIOL 5398, Thesis, 1 course.  
BIOL 5399, Thesis, 1 course.  
BIOL 6390, Independent Research, 5 courses.  
BIOL 6398, Dissertation, 3 courses.  
BIOL 6399, Dissertation, 2 courses.  
BIOL 6490, Independent Research, 1 course.  
BIOL 6590, Independent Research, 1 course.  
BIOL 6690, Independent Research, 4 courses.  
MICR 2440, General Microbiology, 24 courses.

Directed Student Learning

Advised: Ivonne Perez

Dissertation Defense Committee Member. (2008 - Present).  
Advised: Margaret Costanzo
Dissertation Defense Committee Member. (2008 - Present).
   Advised: Sanguita Pal

Dissertation Defense Committee Chair, "SUMOylation of LEDGF/p75." (February 2007 - Present).
   Advised: Murilo Bueno

Dissertation Defense Committee Chair, "Molecular Mechanism of LEDGF/p75 in HIV-1 DNA integration." (January 2007 - Present).
   Advised: Jose Garcia-Rivera

   Advised: Abhisek Mitra

Dissertation Defense Committee Chair, "Cellular roles of LEDGF/p75." (November 2006 - Present).
   Advised: Jeffrey Kugelman

   Advised: David Barry

   Advised: Paulina Aristazabal

   Advised: Damaris Rosado

   Advised: Carlos Sanchez

   Advised: Daniel Reyes

   Advised: Janeth Cortez

   Advised: Elisa Morales

RESEARCH

Published Intellectual Contributions

Refereed Journal Articles


**Journal Articles**


**Other**


Contributed Presentations


Rodriguez, D. (Presenter & Author), Kugelman, J. (Author Only), Garcia-Rivera, J. (Author Only), Llano, M. (Author Only), SACNAS Regional Conference, "Evaluating the tethering role of LEDGF/p75 in HIV-1 integration.,” SACNAS, UTEP. (April 6, 2009).

Garcia-Rivera, J. (Presenter & Author), Bueno, M. (Author Only), Morales, E. (Author Only), Kugelman, J. (Author Only), Rodriguez, D. (Author Only), Llano, M. (Author Only), Regional Meeting of the American Society for Microbiology., "Serine cluster in the CR3 region of LEDGF/p75 has a role in HIV-1 infection.,” ASM, Las Cruces NM. (February 2009).

Contracts, Grants and Sponsored Research

Grant


Research

Llano, Manuel (Principal), "Defining post-entry targets for gene therapy against HIV-1.,” Foundation.

Llano, Manuel (Principal), "Inducing HIV-1 suicide.,” Foundation.

Llano, Manuel (Principal), "Role of SUMOylation of LEDGF/p75 in HIV infection.,” The University of Texas at El Paso, $5,000.00. (January 1, 2009 - December 31, 2009).

Intellectual Contributions in Submission

Refereed Journal Articles


Research in Progress

"Cellular Role of LEDGF/p75.” (On-Going) LEDGF/p75 has a role in transcriptional regulation. We are investigating the role of LEDGF/p75 post-translational modifications in its transcriptional regulatory activity.

"Molecular Mechanism of LEDGF/p75 in HIV-1 DNA integration.” (On-Going) LEDGF/p75 is a required cofactor for HIV-1 DNA integration. However, the exact molecular mechanism of LEDGF/p75 in this process remains unknown. Our research focuses in the evaluation of different alternatives hypothesis.
**University Service**

Committee Member, Institutional Review Board. (2008 - Present).

**Professional Service**

Committee Member, 3rd Annual Research Colloquium, Texas Tech University Health Sciences Center, El Paso, TX. (September 2008 - May 2009).

**Consulting**

Dr. Rosa A. Maldonado-Medina
The University of Texas at El Paso
Biological Sciences
(915) 747-6891
Email: ramaldonado@utep.edu

Education

Ph D, Universidade Federal do Rio de Janeiro, Institute of Biophysics Carlos Chagas Filho, 1996.
Major: Molecular Biology
Supporting Areas of Emphasis: Parasitology
Dissertation Title: Cloning, biochemical characterization and evolutives aspect of the flagellar calcium binding protein from Trypanosoma cruzi

Major: Biology

Professional Memberships

President elected, American Society for Microbiology Rio Grande Branch. (January 2005 - Present).


SIGMA Xi. (2005 - Present).


Student Chapter Faculty Advisor, American Society for Microbiology. (December 2004 - Present).

Brazilian Society of Protozoology. (1999 - Present).

TEACHING

Teaching Experience

The University of Texas at El Paso

BIOL 4198, Special Problems, 5 courses.
BIOL 4298, Special Problems, 4 courses.
BIOL 4398, Special Problems, 5 courses.
BIOL 5302, Resrch Biological Science, 1 course.
BIOL 6390, Independent Research, 5 courses.
BIOL 6490, Independent Research, 1 course.
BIOL 6690, Independent Research, 1 course.
MICR 3449, Prokaryotic Molecular Genetics, 8 courses.
MICR 4453, Immunology, 4 courses.
ZOOL 3464, Medical Parasitology, 4 courses.

Directed Student Learning

Doctoral Advisory Committee Member. (September 2009 - Present).
Advised: Lorena De los Santos
Doctoral Advisory Committee Member. (September 2009 - Present).
  Advised: Susan Barrera

Supervised Research. (August 2009 - Present).
  Advised: Nicolas Silva

Supervised Research. (June 2009 - Present).
  Advised: Katie Bryant

Doctoral Advisory Committee Member. (October 2008 - Present).
  Advised: Tavis Mendez

Doctoral Advisory Committee Chair. (August 2008 - Present).
  Advised: Miguel Vasquez

Doctoral Advisory Committee Chair. (January 2008 - Present).
  Advised: Linda Herrera

Doctoral Advisory Committee Chair. (August 2007 - Present).
  Advised: Carylida Serna

  Advised: Palmira Contreras

  Advised: Ashley

  Advised: Clayton D. Wallace

  Advised: David Vega

  Advised: Fernando Serrano

  Advised: Amparo Hernandez

  Advised: Gloria Polanco

Internship Advisor. (June 2008 - August 2008).
  Advised: Jazmin Gonzalez

  Advised: Miguel Vasquez

  Advised: Enrique Ramos

(August 2007 - December 2007).
  Advised: Maria Aguirre

  Advised: Lilliana Paredes
Master's Thesis Committee Chair. (August 2005 - December 2007).  
Advised: Diana Lara

Advised: Rajabi Laila

Supervised Research. (June 2006 - December 2006).  
Advised: Berenice Arriaga

Advised: Carlos Campos payan

Advised: Jose Luis Terrazas

Advised: Loren Fuentes

Advised: Hector Vela

Internship Advisor. (June 2005 - August 2005).  
Advised: Conchita Pina

Advised: Roman Tellez

Advised: Sergio Echavarri

Awards and Honors

Honorary member of the Golden Key International Honour Society, Golden Key International Honour Society UTEP chapter.

RESEARCH

Published Intellectual Contributions

Refereed Journal Articles


**Other**


**Contributed Presentations**


**Media Contributions**

**TV**

Spanish Fox New. (September 3, 2009).

**Contracts, Grants and Sponsored Research**

**Grant**


Garza, Kristine M (Principal), Aley, Stephen B (Co-Principal), Maldonado-Medina, Rosa A (Co-Principal), "Curricular and Team Research in Biomedical Sciences," Foundation. (September 1, 2009 - August 31, 2013).

Sponsored Research

Aley, Stephen B (Principal), Garza, Kristine M (Co-Principal), Maldonado-Medina, Rosa A (Co-Principal), "Development of Curricular and Team Research in Biomedicine", $1,500,000.00. (September 1, 2006 - August 31, 2010).

Awards and Honors

Carl Storm Underrepresented Minority Fellowship, Gordon Conference.

Intellectual Contributions in Submission

Refereed Journal Articles


Research in Progress

"1. Validation of oleate desaturase as a chemotherapeutic target" (On-Going)
The enzyme oleate desaturase (ODTc) catalyzes the reaction of the conversion of oleic acid (C18:1) into linoleic acid (C18:2). It is likely that in T. cruzi, ODTc participates in various metabolic pathways, including the assembly of glycosylphosphatidylinositol (GPI)-anchored, mucin-like glycoproteins. Recent data suggest that oleic and linoleic acids are essential components for the activation of macrophages by the GPI moiety of trypomastigote mucins. Further indications that ODTc may be a potential chemotherapeutic target include the fact that (1) this enzyme is not present in humans and therefore might be selectively targeted, and (2) the product of ODTc (linoleic acid, C18:2) appears to be an essential molecule for the parasite. In view of the critical role played by this enzyme, we hypothesize that disrupting the availability or activity of oleate desaturase will reduce the viability and infectivity of T. cruzi to a therapeutically effective degree. Target validation includes: (1) demonstrating the essential nature of the putative drug target in the parasite, using knockout experiments; and (2) development and evaluation of ODTc inhibitors. This project is in progress and is being funded by NIH-SCORE.

"2. High-throughput screening of library compounds using Leishmania major and Trypanosoma cruzi" (On-Going)
We developed several transgenic parasites and mammalian cell lines that express GFP, mCherry, or luciferase. These cell lines have been used to screen drug libraries. Currently, three drugs were discovered using this approach and are under a pre-patent process.

"3. In vitro studies of the effect of novel organotins in Trypanosoma cruzi epimastigotes" (On-Going)
Our goal was to evaluate in vitro the chemotherapeutic potential of organotins against T. cruzi and L. major. In 2008, one of my students presented this work at the Rio Grande Branch ASM meeting (Las Cruces, NM), and she received the best undergraduate poster presentation award. Currently, this manuscript is in preparation and will be submitted for publication soon.

"4. Novel immunotherapeutic approaches to treat Chagas disease" (On-Going)
The focus of this project is to investigate whether T. cruzi enzyme, oleate desaturase (ODTc),
and the mucin-associated surface protein (MASP), in combination with the synthetic trisaccharide Ga\(\alpha_1,3\)Gal\(\beta_1,4\)GlcNAc (cGalTri), could be used as vaccine candidates against the parasite (for more detail, see page 41). In 2009, an undergraduate student presented part of this work at the Rio Grande Branch ASM meeting, and she was awarded the best undergraduate poster presentation. This project was funded by a URI (UTEP) grant.

“5. Validate pyruvate phosphate dikinase (PPDK) as a potential chemotherapeutic drug target for Chagas diseases” (On-Going)

The literature indicates that PPDK may provide a link between glycolysis, fatty acid oxidation, and biosynthetic PPI-producing pathways. Furthermore, PPDK is not present in humans, which means that it may be selectively targeted. We propose to demonstrate the essential nature of PPDK as a putative drug target in the parasite at molecular (knockout) and the biochemical level. We have already designed an assay for HTP drug screening using the recombinant PPDK, and the knockout experiments are in progress.

“Improving Progression of Undergraduate Students into Graduate School” (On-Going)

Develop and implement strategies to increase laboratory research experiences for students with the intent of increasing the number of undergraduate students proceeding to post-graduate study.

**SERVICE**

**Department Service**

Committee Member, Toxicology Search Committee.

Committee Member, Biochemistry Degree Committee. (August 2009 - Present).

Faculty Chair, Chair of the Infectious diseases and Immunology Journal Club. (September 2008 - Present).

Attendee, Meeting, Senate alternate. (2008 - Present).

Committee Member, Infectious disease search committee. (2007 - 2008).

**College Service**

Attendee, Meeting, Alternate senator at UTEP. (2008 - Present).
Dr. Tim T. Miller
The University of Texas at El Paso
Biological Sciences
(915) 747-8025
Email: tmiller2@utep.edu

Education

Ph D, College of Pharmacy, University of Texas at Austin, 1996.
Major: Pharmacology and Toxicology
Supporting Areas of Emphasis: Neuropharmacology, Drug Metabolism and Medicinal Chemistry
Dissertation Title: Quinone-Thioethers of MDA are Neurotoxic

BS, College of Pharmacy, University of Texas at Austin, 1987.
Major: Pharmacy
Supporting Areas of Emphasis: Pharmacology, Medicinal Chemistry and Toxicology of Therapeutic Drugs

pre-Pharmacy, University of Texas at El Paso, 1985.
Major: Pharmacy
Supporting Areas of Emphasis: Biology and Chemistry

Professional Memberships

Gulf Coast Regional Chapter of the Society of Toxicology. (2005 - Present).


Biological Chemistry Division of the ACS (National). (2001 - Present).

Chemical Toxicity Division of the ACS (National). (2001 - Present).


American Society for Biochemistry and Molecular Biology. (1996 - Present).


Ohio Valley Regional Chapter of the Society of Toxicology. (2000 - 2005).

Gulf Coast Regional Chapter of the Society of Toxicology. (1991 - 2000).

Awards and Honors

Honorable Mention Award for Oral Presentation (Priya Venkatakrishnan) entitled: Absence of Nitric Oxide Synthase in Exquisitely Pure Liver Mitochondria, Annual Meeting of the Gulf Coast Regional Chapter of the Society of Toxicology. (2007).

Outstanding Academic Advisor in Biological Sciences (nomination, Department of Biological Sciences, University of Texas at El Paso. (2007).
Society of Toxicology Student Travel Award  (Berenise Rivera). Expenses paid by SOT for her to attend the Undergraduate Education Program at, the Annual Meeting of the Society of Toxicology. (2007).

Office of Research and Sponsored Projects Young Investigator Award, University of Texas at El Paso.. (2006).

Nomination for service on the Student Organizations and Activities Committee at UTEP., University of Texas at El Paso. (2005).


Barbara Bowman Scholarship for Outstanding Postdoctoral Fellow., University of Texas Health Science Center at San Antonio. (1999).

Travel Award Recipient, 13th International Congress on Flavins and Flavoproteins. (1999).

First Place in the Carl C. Smith Graduate Student Award Competition, 34th Annual Meeting of the Society of Toxicology. (1995).

Second Place Poster Presentation, Annual meeting of the Gulf Coast Regional Chapter of the Society of Toxicology. (1995).

TEACHING

Teaching Experience

The University of Texas at El Paso
- BIOL 1305, General Biology, 5 courses.
- BIOL 4395, Topics in Biology, 1 course.
- BIOL 4398, Special Problems, 3 courses.
- BIOL 5130, Seminar, 4 courses.
- BIOL 5302, Resrch Biological Science, 3 courses.
- BIOL 5340, Structure/Funct Macromolecules, 1 course.
- BIOL 6390, Independent Research, 1 course.
- BIOL 6398, Dissertation, 1 course.

RESEARCH

Published Intellectual Contributions

Refereed Journal Articles


Journal Articles


**Other**


Contributed Presentations


Miller, R. T., Joshi, C., SOT-2008 meeting, "Interactions of DNB with CAM-free Neuronal NOS."


Miller, R. T., Vargas Medrano, J., Internal Congress of Toxicology - IX, "Designer Naphthoquinones as Modulators of Nitric Oxide Synthas.," Quebec, Canada. (2007).

Miller, R. T., Vargas Medrano, J., Oral Presentation at the BBRC Advisory Committee meeting, "Designer Naphthoquinones as Modulators of Nitric Oxide Synthas.," Thomas Rivera Convention Center,, El Paso, TX. (2007).


Contracts, Grants and Sponsored Research

Contract

Borrok, David (Co-Principal), Kirken, Robert A (Principal), Miller, Richard T (Co-Principal), "TASK 15: IATCS coolant support phase I: Degradation of OPA (part 2)," Industry, $135,720.00. (June 1, 2009 - October 1, 2009).

Borrok, David (Principal), Miller, Richard T (Co-Principal), "Task 6: IATCS coolant support phase 1: Degradation of OPA (part 1)," Industry, $47,985.00. (July 1, 2008 - September 30, 2008).
Grant

Borrok, David (Principal), Miller, Richard T (Co-Principal), “Experimental study of Cu, Fe, and Zn isotopes: Developing tools to understand biogeochemical processes in geologic systems,” Federal, $174,661.00. (August 1, 2008 - July 31, 2011).

Research in Progress

“Regional Business Cycle Analysis” (On-Going)

SERVICE

Department Service

Committee Chair, Student Organizations and Activities Committee. (2006 - Present).
Committee Member, University Admissions and Standards Committee. (2006 - Present).
Work to strengthen the Biology Graduate Program, Biology Graduate Program. (2005 - Present).
Biology Faculty Search Committee, Toxicology/Biological Sciences. (2005 - 2006).

University Service

Committee Member, Ecology and Evolutionary Biology Ph.D. Degree Committee. (2006 - Present).
Committee Member, Graduate Assembly of the University of Texas at El Paso. (2005 - Present).
Committee Member, Admissions and Standards Committee. (2006 - 2009).
Committee Chair, Student Organizations and Activities Committee. (2006 - 2007).
Committee Chair, Student Organizations and Activities Committee. (2006 - 2007).
Committee Member, Institutional Animal Care and Use Committee (IACUC). (2003 - 2005).
Committee Member, Graduate Assembly of the University of Kentucky. (2000 - 2005).

Professional Service

Reviewer, Grant Proposal, Grant Reviewer for American Chemical Society. (2004 - Present).
Guest Speaker, School of Public health, Iowa, Iowa. (2008).
Guest Speaker, University of Texas at El Paso. (2008).
Guest Speaker, University of Texas at El Paso. (2008).
Guest Speaker, Attendee of the Howard Hughes Mentoring Workshop. (2007).
Guest Speaker, Faculty and Staff training Development. (2007).
Guest Speaker, Gulf Coast Regional Society of Toxicology Meeting.. (2007).

Guest Speaker, International Congress of Toxicology Meeting.. (2007).

Reviewer, Grant Proposal, Reviewer for the SOT - Carl C. Smith Graduate Student Award Competition. (2007).


Guest Speaker, University of Texas at El Paso. (2006).

Guest Speaker, Director of Research for Hispanic Students in the BRIDGES Program, El Paso, TX. (2005 - 2006).

Reviewer, Grant Proposal, Grant Reviewer for NIH Special Study Section. (2003 - 2004).

Public Service

Science Fair Judge, Ascarate Elementary Science Fair. (2007).

Science Fair Judge, St. Pius X School Science Fair. (2007).


Guest Speaker, Hornedo Middle School Career Day. (2006).

Guest Speaker, Trippin Elementary. (2006).


Guest Speaker, Trippin Elementary. (1997).

Consulting


Dr. Manuel Miranda-Arango  
The University of Texas at El Paso  
Biological Sciences  
(915) 747-6645  
Email: mmiranda3@utep.edu

Education

Ph D, National University of Mexico (UNAM), 1996.  
Major: Biochemistry  
Supporting Areas of Emphasis: Cell Biology, Neurobiology  
Dissertation Title: Molecular cloning of the gene encoding for the plasma membrane ATPase in Kluyveromyces lactis

MS, 1993.  
Major: Basic Biomedical Research  
Supporting Areas of Emphasis: Biochemistry  
Dissertation Title: Cloning of the gene encoding the high affinity potassium transporter from Kluyveromyces lactis

BS, Biology School, at the National University of Mexico (UNAM), 1990.  
Major: Biology

Professional Memberships

Member, National Hispanic Science Network on Drug Abuse. (2008 - 2009).

Member, The Scientific Society of America, Sigma Xi. (2008 - 2009).


Development Activities Attended

Workshop, "Documenting your accomplishments: creating an electronic professional portfolio for tenure, promotion, and awards.," UTEP. (October 7, 2009 - Present).


Workshop, "UTEP College of Science Grant Workshop," UTEP. (July 23, 2009 - Present).

Workshop, "Teaching Large Classes.," UTEP. (October 13, 2009).

Workshop, "Modeling good writing for students.," UTEP. (March 3, 2009).

TEACHING

Teaching Experience

The University of Texas at El Paso  
BIOL 1305, General Biology, 9 courses.  
BIOL 4198, Special Problems, 5 courses.  
BIOL 4298, Special Problems, 2 courses.
BIOL 4398, Special Problems, 5 courses.
BIOL 5302, Research Biological Science, 1 course.
BIOL 6303, Gene Regulation, 1 course.
BIOL 6390, Independent Research, 4 courses.
BIOL 6398, Dissertation, 1 course.
BIOL 6490, Independent Research, 1 course.
BIOL 6690, Independent Research, 4 courses.
ZOOL 4384, Neurobiology, 1 course.

Directed Student Learning

Dissertation Committee Chair, "Dissecting the role of phosphorylation of the glycine transporter 1 and the localization of the substrate pore."
Advised: Javier Vargas-Medrano

Dissertation Committee Chair.
Advised: Susana Barrera, Sheta Lavania

Dissertation Committee Member.
Advised: Lorena De Los Santos, Derbashi Roy, Jaidee Zavala, Carylinda Serna, Diondra Harris, Margaret Costanzo, Jorge Anibal Sierra

Advised: Karina Schnittker, Jessica Pena

Master's Thesis Committee Member.
Advised: Atanu Paul

Supervised Research.
Advised: Elisa Robles, Margarita Trinidad Gomez, Ivan Yair Ramirez

Supervised Research.
Advised: Jorge Anibal Sierra, Mara Hall, Carylinda Serna

Dissertation Defense Committee Chair, "The regulation of the glycine transporter 1 by protein kinase C-dependent ubiquitination." (December 1, 2009).
Advised: Joe Luevano

RESEARCH

Published Intellectual Contributions

Refereed Journal Articles


Conference Proceedings


Journal Articles


Invited Presentations

Miranda-Arango, M. (Presenter & Author), Sierra, J. (Author Only), Vargas-Medrano, J. (Author Only), Behavior, Biology and Chemistry: translational research in addiction.. "Regulation of activity of the dopamine and glycine transporters by phosphorylation and ubiquitination.,"
Contributed Presentations


Miranda-Arango, M. (Author Only), Samantha, H. (Presenter & Author), Jorge, S. (Author Only), Javier, V.-M. (Author Only), REU annual student research expo, "Ubiquitination and endocytosis of the dopamine transporter does not control transport activity.," UTEP-Biological Sciences Department, UTEP. (July 31, 2009).


Contracts, Grants and Sponsored Research

Grant

Miranda-Arango, Manuel (Co-Principal), Narayan, Mahesh (Principal), "Development of phytochemical pharmacophores against onset of Alzheimer's and Parkinson's diseases.," State.

Miranda-Arango, Manuel (Principal), "SCORE supplement:Insights into the Regulation of the Glycine Transporter 1 (GlyT1)," Federal.

Gosselink, Kristin (Supporting), Castaneda, Edward (Principal), Ferreira-Pinto, Joao B (Supporting), Wiebe, John S (Supporting), Cuadrado, Mary (Supporting), Cohn, Lawrence D (Supporting), Amastae, Jon (Supporting), Lieberman, Louis (Supporting), O'Dell, Laura E (Supporting), Miranda-Arango, Manuel (Supporting), "UTEP DIDARP - Vulnerability Issues in Drug Abuse (VIDA)," Federal.

Miranda-Arango, Manuel (Co-Principal), Castaneda, Edward (Principal), "UTEP DIDARP:Vulnerability issues in drug abuse (VIDA)," Federal.

Miranda-Arango, Manuel (Principal), "Insights into the Regulation of the Glycine Transporter 1 (GlyT1)," Federal, $1,011,000.00. (September 15, 2008 - July 31, 2012).

Research in Progress
"Characterization of the plasma membrane ATPase from the phytopathogen Ustilago maydis" (On-Going)
This project is being performed in collaboration with Dr. Juan Pablo Pardo from the National University of Mexico. A graduate student from Mexico is cloning the gene encoding for ATPase which will be expressed in Saccharomyces cerevisiae for expression and characterization of the protein.

"Effects of methamphetamine on the neuronal dopamine transporter activity" (On-Going)
This research project includes the characterization of the effects of amphetamines (amphetamine and methamphetamine) on the neuronal dopamine transporter (DAT) trafficking. It is well described that amphetamine addicts have a reduced number of DATs in the brain, which can be explained as accelerated degradation due to the drug. Preliminary results suggest that methamphetamine exposure triggers DAT ubiquitination when transporter is expressed in model cells. The working hypothesis of this project is: reduced levels of DAT in methamphetamine addicts are due to DAT ubiquitination and degradation. Our current research is aimed to answer if DAT becomes ubiquitinated upon drug treatment using a rat model.

"Identification of Glycine transporter 2 interacting proteins" (On-Going)
This line of research involves the identification of interacting proteins with the glycine transporter 2. Luciana Girotto, a postdoctoral researcher in my laboratory is currently cloning and expressing the amino terminal tail of the human transporter as a GST-fusion protein. This fusion protein will be used as a bait to identify interacting proteins.

"Molecular characterization of the neuronal glycine transporter" (Writing Results)
The main focus of this project involves the molecular characterization of the neuronal glycine transporter (GlyT1).
During the past two year, we have been actively characterizing post-translational modifications of the transporter, including ubiquitination and phosphorylation. Based on our working hypothesis that protein kinase C activation regulates GlyT1 trafficking and activity, we have concluded that PKC-dependent GlyT1 ubiquitination is the signal for endocytosis and subsequent downregulation. In addition, we have mapped the lysine residues used for ubiquitination. These findings are being prepared for publication. In addition, we are investigating whether PKC-dependent GlyT1 phosphorylation is modulating the activity of the transporter. Experiments are in progress to map phosphorylation sites by site-directed mutagenesis. An NIH grant is currently supporting this research and two graduate students are involved in this project.

SERVICE

Department Service

Committee Member, Development of a Bachelors of Science in Cellular and Molecular Biochemistry.

Site visitor: Speaker: Alexander Sorkin, Professor, University of Colorado at Denver Health Sciences Center.. (November 20, 2009 - Present).

Committee Member, Teaching assistantship (TA) committee. (December 2007 - December 2009).

Committee Member, Neuroscience Faculty Search Committee. (December 2008 - June 2009).

University Service
Attendee, Graduation. (May 16, 2009 - Present).
Attendee, Graduation. (December 13, 2008 - Present).

Professional Service


Reviewer, Textbook, Elsevier. (July 6, 2009 - Present).

Referee, UTEP. (April 16, 2009 - Present).

Reviewer, Conference Paper, Texas Tech Health Sciences Center/UTEP. (April 2009 - Present).


Public Service

Seminar to Magnet High School Students, Biological Sciences Department-UTEP, El Paso, TX. (October 12, 2009 - Present).
Dr. Mahesh Narayan  
The University of Texas at El Paso  
Chemistry  
Email: mnarayan@utep.edu

Education

Major: Protein Folding

Postdoctoral, Cornell University, 1997.

Ph D, The Ohio State University, 1997.  
Major: Biophysics

BS, Bombay University, 1991.  
Major: Physics

Professional Positions

Academic - Post-Secondary

Sr. Research Associate, Department of Chemistry and Chemical Biology, Cornell University.  

Post-doctoral Associate/ Research Associate, Department of Chemistry and Chemical Biology,  


Professional


Awards and Honors

ACS honorarium.

European Union Travel Award.

ICSABER Excellent Scientific presentation certificate, OSU.

Presidential Merit Scholar, Parle College, Bombay University.

TEACHING

Teaching Experience

The University of Texas at El Paso

BINF 5111, Chem. Sem. for Bioinformatics, 1 course.
CHEM 1306, General Chemistry (C), 20 courses.
CHEM 1408, Introductory Chemistry (C), 2 courses.
CHEM 4131, Laboratory for Biochemistry, 2 courses.
CHEM 4176, Introduction to Research, 5 courses.
CHEM 4330, Biochem: Structure/Function, 1 course.
CHEM 4376, Introduction to Research, 5 courses.
CHEM 5195, Graduate Seminar, 2 courses.
CHEM 5196, Graduate Research in Chemistry, 2 courses.
CHEM 5339, Contemp Topics in Biochemistry, 2 courses.
CHEM 5396, Graduate Research in Chemistry, 4 courses.
CHEM 5398, Thesis, 4 courses.
CHEM 5399, Thesis, 4 courses.
CHEM 6195, Graduate Seminar, 1 course.
CHEM 6196, Graduate Research in Chemistry, 2 courses.
CHEM 6339, Contemp Topics in Biochemistry, 2 courses.
CHEM 6396, Graduate Research in Chemistry, 7 courses.
CHEM 6398, Dissertation, 2 courses.
HON 4395, Honors Senior Thesis, 1 course.
HON 4396, Honors Senior Thesis, 1 course.

RESEARCH

Published Intellectual Contributions

Refereed Journal Articles


Journal Articles


**Other**


Contributed Presentations


Contracts, Grants and Sponsored Research

Grant

Miranda-Arango, Manuel (Co-Principal), Narayan, Mahesh (Principal), "Development of phytochemical pharmacophores against onset of Alzheimer’s and Parkinson’s diseases.," State.

Research in Progress

"Nutrition and Women's health, border health" (On-Going)
Detect toxic chemicals in air

SERVICE
Professional Service

Chairperson, Bioinformatics colloquium.

Committee Member, Mack Award Committee/ Department of Chemistry OSU.


Attendee, Meeting, 5th International conference on Ribonuclease, Warrenton, Virginia. (April 1999).
Dr. German Rosas-Acosta  
The University of Texas at El Paso  
Biological Sciences  
(915) 747-5122  
Email: grosas3@utep.edu

Education

Ph D, New York University - NYU Medical Center - Sackler Institute of Graduate Biomedical Sciences, 1998.  
Major: Biomedical Sciences

MS, New York University - NYU Medical Center - Sackler Institute of Graduate Biomedical Sciences, 1995.  
Major: Biomedical Sciences

BS, Universidad de los Andes, 1988.  
Major: Microbiology

Professional Positions

Academic - P-12

Research Assistant and Staff Member, Instituto de Inmunología- Hospital San Juan de Dios, Bogota, D.C., Colombia. (February 1989 - February 1992).

Academic - Post-Secondary

Graduate Student, Sackler Institute of Biomedical Sciences, Graduate School of Arts and Science, New York University, New York, NY. (January 1994 - May 1998).

Research Assistant, Department of Medical and Molecular Parasitology, New York University Medical Center, New York, NY. (March 1992 - December 1993).

Professional

Assistant Professor, The University of Texas at El Paso. (January 2, 2007 - Present).

Assistant Professor - Research, Department of Microbial and Molecular Pathogenesis, Texas A&M University System Health Science Center, College Station, TX. (July 2005 - December 2006).

Postdoctoral Research Associate, Department of Medical Microbiology and Immunology, Texas A&M University System Health Science Center, College Station, TX. (April 2002 - June 2005).

Assistant Research Scientist, Department of Entomology, Texas A&M University, College Station, TX. (June 2000 - March 2002).

Postdoctoral Research Associate, Department of Entomology, Texas A&M University, College Station, TX. (June 1998 - May 2000).

Professional Memberships

The International Papillomavirus Society.
Full Member, American Society for Virology. (June 2009 - Present).


American Association for the Advancement of Science. (January 1999 - Present).

Awards and Honors

Postdoctoral travel grant award, 22nd International Papillomavirus Conference/ Vancouver, British Columbia, Canada. (May 2, 2005).


Postdoctoral travel grant award, The Second Annual McLaughlin Symposium in Infection and Immunity: “EBV and HPV: Oral infection, persistence, and phagocytosis/ The University of Texas Medical Branch at Galveston. (February 13, 2003).

Postdoctoral travel grant award, 19th Annual Meeting American Society for Virology/ Colorado State University Fort Collins. (July 8, 2000).

Elected Departmental Students' Representative, Department of Medical and Molecular Parasitology/ New York University Medical Center. (January 1995).

Selected Research Assistant Position, Instituto de Inmunologia, Hospital de San Juan de Dios Department of Microbiology. (January 1989).

Undergraduate Student Teaching Assistantship, Department of Microbiology. Universidad de los Andes. (July 1987).

TEACHING

Teaching Experience

The University of Texas at El Paso

1 course.
BIOL 3414, Molecular Cell Biology, 10 courses.
BIOL 4198, Special Problems, 2 courses.
BIOL 4298, Special Problems, 2 courses.
BIOL 4398, Special Problems, 5 courses.
BIOL 5301, Select Adv Topics Biol Science, 2 courses.
BIOL 5302, Resrch Biological Science, 1 course.
BIOL 5398, Thesis, 1 course.
BIOL 5399, Thesis, 1 course.
BIOL 5502, Resrch in Biological Sciences, 1 course.
BIOL 6390, Independent Research, 3 courses.

Directed Student Learning

Dissertation Committee Member. (January 2009 - Present).
Advised: Alexandria Melendez

Doctoral Advisory Committee Chair. (January 2009 - Present).
Advised: Andres Santos
Undergraduate Honors Thesis. (January 2009 - Present).
Advised: Joe Luevano

Doctoral Advisory Committee Member. (January 2008 - Present).
Advised: Jose Garcia

Doctoral Advisory Committee Member. (January 2008 - Present).
Advised: Lilian Nohara

Doctoral Advisory Committee Member. (January 2008 - Present).
Advised: Murilo Bueno

Doctoral Advisory Committee Member. (January 2008 - Present).
Advised: Tavis Mendez

Master's Thesis Committee Chair. (January 2008 - Present).
Advised: Sangita Pal

Master's Thesis Committee Member. (June 2007 - Present).
Advised: John Rosskopf

Master's Thesis Committee Member. (June 2007 - Present).
Advised: John Upton

Advised: Lindsay Greenup

Advised: Martha Flores

Advised: Melissa Duran

Advised: Shawna Kurth

Advised: Veronica Rocha

Advised: Jennifer Valdez

Advised: Lauren Garcia

Advised: Leeah Amaya

Advised: Paloma Becker

RESEARCH
Published Intellectual Contributions

Refereed Journal Articles


**Conference Proceedings**


**Other**


**Invited Presentations**


**Contributed Presentations**


Pal, S., Rosas, J. M., Calderon, V., Gallegos, C., Rosas-Acosta, G., 28th Annual Meeting of the American Society for Virology, "The influenza A non-structural protein 1 (NS1A) is modified by the cellular sumoylation system," University of British Columbia, Vancouver, Canada. (July 2009).


Bueno, M., Garcia-Rivera, J. A., Morales, E., Kugelman, J. R., Rodriguez, D., Cortez, J., Rosas-Acosta, G., Llano, M., Third International Conference on Retroviral Integrase,
"SUMOylation of LEDGF/p75 influences the sub-nuclear localization of HIV-1 integrase," Woodshole, MA. (September 14, 2008).


Rosas-Acosta, G. (Presenter & Author), "Interactions between the cellular sumoylation system and Influenza virus." (January 26, 2007).

Rosas-Acosta, G. (Presenter & Author), "Nucleocytoplasmic shuttling of the BPV-E1 protein." (September 1, 2006).

Rosas-Acosta, G. (Presenter & Author), "Identification of sequences in the bovine papillomavirus E1 protein that mediate its CRM1-dependent nuclear export." (July 15, 2006).

Rosas-Acosta, G. (Presenter & Author), "Cross talk between the sumoylation system and keratinocyte differentiation in HaCaT cells." (February 9, 2006).

Rosas-Acosta, G. (Presenter & Author), "The Bovine Papillomavirus E1 helicase is exported from the nucleus by a CRM-1 dependent Leptomycin B resistant pathway." (May 2, 2005).

Rosas-Acosta, G. (Presenter & Author), "SUMO-proteomic surprises: The small GTPase Ran is sumoylated." (April 27, 2005).

Rosas-Acosta, G. (Presenter & Author), "Development of a Baculovirus encoded sumoylation system." (July 10, 2004).


Rosas-Acosta, G. (Presenter & Author), "Regulation and functional effects of the sumoylation of the BPV-E1 protein." (February 20, 2004).

Rosas-Acosta, G. (Presenter & Author), "Exploring the sumeome: insights on the biology of sumo and sumo conjugation provided by cell lines expressing tap-sumo1/tap-sumo3 and the preliminary assessment of the sumeome." (February 5, 2004).


Rosas-Acosta, G. (Presenter & Author), "Proteins of the PIAS family enhance the sumoylation of the papillomavirus E1 protein." (February 13, 2003).

Rosas-Acosta, G. (Presenter & Author), "Proteins of the PIAS family enhance the sumoylation of the papillomavirus E1 protein." (October 25, 2002).


Rosas-Acosta, G. (Presenter & Author), "Erythrocyte Invasion by Plasmodium vivax Merozoites: The Reticulocyte Binding Proteins." (September 24, 1997).


Media Contributions

Newspaper


Radio

KTEP Science Studio. (May 1, 2009).

Contracts, Grants and Sponsored Research

Grant

Rosas-Acosta, German (Principal), "A novel broad-spectrum anti-influenza therapy targeting a cellular system," State, $0.00.
Rosas-Acosta, German (Principal), "The cellular SUMOylation system as a novel target for anti-influenza therapies," Foundation, $0.00.

Rosas-Acosta, German (Principal), "The sumoylation system as a novel target for anti-influenza therapies," Foundation, $0.00.

Rosas-Acosta, German (Principal), Walker, David (Principal), "Western Regional Center for Biodefense and Emerging Infectious Diseases Research (U54 AI057156). Subproject title: Modulating the cellular SUMOylation system as a novel therapeutic approach against viral diseases," Federal, $0.00.

Rosas-Acosta, German (Principal), "The SUMOylation system as a novel target for anti-influenza therapies," Federal, $333,000.00. (July 1, 2008 - June 30, 2011).

Sponsored Research

Johnson, Kyle L (Co-Principal), Walker, David (Principal), Aguilera, Renato (Principal), Rosas-Acosta, German (Co-Principal), "Western Regional Center for Biodefense and Emerging Infectious Diseases Research (U54 AI057156). Subproject title: Development of Assays for Discovery of Novel Anti-Viral/Anti-Bacterial Compounds," Federal, $475,391.00. (September 2009 - May 2011).

Intellectual Contributions in Submission

Refereed Journal Articles


Research in Progress

"Effect of modulating the activity of the cellular SUMOylation system on influenza viral infection" (On-Going)

The ultimate goal of this project is to determine whether changes in the activity of the cellular SUMOylation system exert substantial effects on influenza viral replication.

We have recently developed a large collection of recombinant adenoviruses that allow us to over-express engineered recombinant proteins that produce robust increases or dramatic decreases in global protein SUMOylation in the cell. Through the use of those recombinant adenoviruses we have already demonstrated that altering the normal levels of global protein SUMOylation, either by increasing it or decreasing it, results in substantial delays in the expression of a late viral protein, substantial decreases in viral-induced cytopathic effects, and dramatic decreases in infectious viral particles production. Importantly, a substantial decrease in cellular SUMOylation has proven to exert the most damaging effect on viral replication. This indicates that SUMOylation modulates essential stages of the influenza life cycle, either directly by regulating the activity of specific viral proteins, or indirectly by regulating the activity of cellular proteins needed for viral replication. This conclusion implies that small molecule inhibitors of the cellular SUMOylation system may act as effective antivirals against influenza virus.

We are currently reproducing our data using various cell lines to conclusively demonstrate the validity of our preliminary data. These results will be submitted for publication during the first half of 2010. Once this stage of the project is concluded, we will attempt to execute similar
experiments in mice to determine if our tissue culture findings are valid also in animal models. Simultaneously, we are starting to test the activity of a previously reported small molecule inhibitor of the cellular SUMOylation system with the ultimate goal of evaluating its potential effect against influenza virus infection.

This project has extreme relevance for the goals of my laboratory and for the potential development of innovative anti-influenza therapies. Two recently published large-scale screenings looking for cellular factors required for influenza virus multiplication executed by two different groups support an essential role for the cellular SUMOylation system during influenza infection (Shapira, S.D. et al. "A physical and regulatory map of host-influenza interactions reveal pathways in H1N1 infection", Cell (2009) 139:1255-1267; Konig, R. et al. "Human host factors required for influenza virus replication", Nature (2010), doi:10.1038/nature08699 epub ahead of print, Dec 21, 2009). Thus, our findings are rapidly gaining support from data generated by other research groups. As we are currently the only laboratory working on the interactions between the SUMOylation system and influenza viral infection, our work is gaining relevance in the field and our publications will likely position us as the leading research group in this hot research area.

"Evaluation of antiviral activity of nano-scale Zn/lipid complexes" (On-Going)
We are currently evaluating the potential anti-influenza virus activity of various Zn/lipid complexes synthesized by the group directed by Dr. Juan C. Noveron (Dept. of Chemistry, UTEP). These complexes have the potential to be applicable for the long-term coating of most surfaces in household and hospital settings, providing a valuable tool to control the dissemination of the influenza virus.

"High-throughput screening of a synthetic compound library for novel anti-influenza therapeutic agents" (On-Going)
The goal for this project is to identify novel compounds capable of inhibiting the activity of the influenza virus RNA polymerase. This viral enzyme is critical for influenza virus replication and exhibits substantial differences with the RNA polymerases normally present in the cell. Therefore, a compound able to inhibit the activity of this viral Polymerase may exert little or no toxicity on the cell and represent a valuable addition to our current battery of anti-influenza drugs.

We are in the final stages of developing a recombinant adenovirus construct that will allow us to execute high-throughput screenings of synthetic compound libraries looking for novel anti-influenza agents. The simple idea behind the screening is that all the cells in a confluent cellular population will fluoresce red upon transduction with the recombinant adenovirus. However, upon subsequent infection and multiplication of influenza virus, the cells will also fluoresce green, due to the production of a green fluorescent protein expressed under the control of the influenza virus RNA polymerase. Therefore, cells treated with an effective inhibitor against influenza that exerts no toxic effects on the cell will fluoresce red but not green; cells treated with a compound toxic for the cells will not fluoresce red or green; finally, cells treated with a compound exerting no toxicity on the cells and no effect upon viral infection will fluoresce green and red.

We will likely finish the initial experimental set up during spring 2010 and will initiate the large high-throughput screenings during fall 2010.

"Proteomic analysis of influenza virus protein SUMOylation" (On-Going)
The ultimate goal of this project is to identify all the influenza viral proteins that are SUMOylated during infection. This will provide insights into the potential roles played by SUMOylation during viral infection.

We have recently demonstrated that the cellular SUMOylation system affects and is affected by influenza virus infection. Our initial analyses have conclusively identified 2 viral proteins as authentic SUMO targets, and have indicated the existence of 2 likely additional viral SUMO targets. However, our in vitro analyses indicated that virtually all the proteins produced by influenza virus are SUMO targets. Therefore, we want to verify whether other viral proteins constitute bona fide SUMO targets during infection using a proteomic approach. To this end,
we have developed an effective method to purify all SUMOylated proteins from influenza-infected cells. We will be executing various purifications followed by tandem mass spectrometry analyses to identify all the viral proteins that are SUMOylated at any time upon viral infection. These studies are aimed to be finished by fall 2010.

"Role of SUMOylation for the effective replication of RNA viruses“ (On-Going)
The ultimate goal of this project is to establish whether our observations related to the relevance of the cellular SUMOylation system for influenza viral multiplication are applicable to other RNA viruses.

Although there are now several published reports that support a role for SUMOylation on the replicative cycle of various RNA viruses, the actual effect of modulating cellular SUMOylation on the replication of various RNA viruses has not been addressed directly.

To achieve the goal above we will collaborate with various groups, including Dr. Kathy Hanley's group at NMSU, and Dr. Robert Doms at the University of Pennsylvania School of Medicine, to determine the effect of modulating cellular SUMOylation on the multiplication of various RNA viruses.

"Role of SUMOylation for the influenza virus non-structural viral protein NS1A“ (On-Going)
The ultimate goal of this project is to characterize the effect that SUMOylation exerts on the activity of the non-structural influenza viral protein NS1A.

We recently demonstrated that this viral protein is a bona fide target of the SUMOylation system. As NS1A plays the essential role of neutralizing cellular anti-viral defenses, it is possible that SUMOylation may modulate some of its activities and therefore exert dramatic effects on viral fitness.

We have already mapped two lysine residues in NS1A that serve as SUMO conjugation sites, and have demonstrated that a mutant protein lacking those lysines is not SUMOylated. We are currently studying the ability of this mutated form of NS1A to perform all the normal functions attributed to it, including the neutralization of the interferon response, the temporal regulation of viral RNA synthesis, the selective translation of viral mRNAs, and the regulation of the host apoptotic response. This study is among the most important projects in my laboratory as the characterization of a cellular pathway endowed with the ability to regulate the activity of this viral protein may lead to the development of novel broad-spectrum antiviral therapeutic approaches applicable against the most pathogenic forms of the virus.

We aim to finish a preliminary screening of some of the possible effects of SUMOylation on NS1A by the end of summer 2010.

SERVICE

Department Service

Committee Member, Departamental Graduate Curriculum Committee. (November 2008 - Present).

Committee Member, Departmental Admissions Committee. (October 2008 - Present).

College Service

Committee Member, College of Science Committee for the creation of a Bachelor of Science degree in Cellular and Molecular Biochemistry. (August 2009 - Present).

University Service

Committee Member, Union and Bookstore Committee. (November 2009 - Present).
Committee Member, Faculty Senate. (November 2008 - Present).

Committee Member, Institutional Biosafety Committee. (March 2007 - Present).

Professional Service

Guest Speaker, SUMO nucleocytoplasmic traffic and viral infections/ Department of Biology, University of Texas El Paso, El Paso, Texas. (May 9, 2006).

SUMO nucleocytoplasmic traffic and viral infections/ Department of Microbial and Molecular Pathogenesis, College Station, Texas. (April 24, 2006).

Invited Lecture, The mammalian sumoylation system and the nucleocytoplasmic traffic of viral and mammalian proteins/ Videoconference - Universidad Nacional de Colombia, Bogota D.C.. (February 23, 2006).

Connections between the mammalian sumoylation system and the nucleocytoplasmic traffic of viral and mammalian proteins/ CorpoGen, Bogota D.C.. (July 1, 2005).

Invited Lecture, The mammalian sumoylation system and the nucleocytoplasmic traffic of viral and mammalian proteins/ Center For Extracellular Matrix Biology, Texas A&M Institute of Biosciences & Technology, Houston, Texas. (April 20, 2005).

Invited Lecture, Red Blood Cell Invasion by Plasmodium vivax Merozoites: The Reticulocyte Binding Proteins/ Department of Entomology, Texas A&M University, College Station, Texas. (October 27, 1997).

Guest Speaker, First Sackler Institute Retreat/ Sacker Institute of Biomedical Sciences. (November 1, 1996 - November 3, 1996).

Public Service

Judge - Science fair, Socorro High School - SISD, El Paso, TX. (December 9, 2009 - Present).

Speaker and one of 5 faculty hosts, Mesita Elementary School - EPISD - Day visit to the Dept. of Biological Sciences - UTEP, El Paso, TX. (February 24, 2009 - Present).

Consulting

For Profit Organization, El Paso Electric Company, El Paso, TX. (February 2009).

Awards and Honors

Service, Community

Interview for a local newspaper, El Paso Times. (May 22, 2009).

Participant on a radio program - KTEP Science Studio, KTEP. (May 1, 2009).

Featured as one out of 50 young Colombian professors in the USA, PODER360 - A Colombian magazine. (January 2009).

Selected as a Texas Innovator, State of Texas - Texas Innovator (monthly newsletter). (January 2009).
Newspaper article on new grant, El Paso Times. (July 29, 2008).

News release in UTEP University Communications, UTEP University Communications. (July 25, 2008).

**Service, Professional**

NIH grant reviewer, NIH - Minority Biomedical Research Support Meeting. (July 18, 2008).
TEACHING

Teaching Experience

The University of Texas at El Paso
BIOL 1305, General Biology, 10 courses.
BIOL 4398, Special Problems, 4 courses.

Research in Progress

"Arachidonic acid, GPCR and breast cancer" (On-Going)
The goal of my proposal is to test the hypothesis that G-protein-coupled-receptors (GPCRs) play critical roles in the initiation and progression of breast cancers by inducing hyper-arachidonic acid (hyper-AA) metabolism leading to the syntheses of excess inflammatory lipid mediators that participate in rapid cell growth, angiogenesis, and tumor formation. Our preliminary results demonstrate that AA treatment stimulates the syntheses of eicosanoid molecules in transformed breast cells (MCF10A) but not in malignant cells (MCF7), and this could be due to the fact that COX-2 expresses constitutively in cancer cells. Interestingly, it was observed that various G-protein agonists stimulate the syntheses of thromboxane A2 and HETE compounds in MCF-7 but not in MCF10A cells, suggesting that the molecular and functional alterations of GPCRs, which occur during carcinogenesis, might be involved in causing hyper AA metabolism. It was observed that cPLA2 activity was ~2-fold lower in MCF10A and can be further inhibited significantly by G-protein agonists. Arachidonic acid treatment also altered the syntheses of Gsα, Gqα, Giα and Gβγ both at mRNA and protein levels and changed their characteristic cellular localizations. Currently, we are studying the possible interactions between GPCR signaling and AA metabolism in greater detail both in non-cancer and cancer cells to establish the pathways more clearly. Therefore, the goals of our proposals are: (1) To evaluate the syntheses of various arachidonic acid-derived lipid mediators in MCF10A, MCF7 and MDA-MB-231 cells in the presence and absence of agonists and antagonists for GPCRs, and the inhibitors of cPLA2 and COX-2 enzymes (2) To determine the role of cPLA2 and COX-2 in GPCR-mediated eicosanoid productions in breast cancer cells by knocking down the expression of cPLA2 and COX-2 using siRNA technology, and (3) To evaluate whether the production of AA-derived eicosanoid syntheses in MCF10A cells is prostaglandin D2 receptor (DP2) dependent. This receptor is expressed only in normal and transformed cells, and its deficiency facilitates vascular leakage and angiogenesis, most likely by facilitating the syntheses of prostaglandins and other inflammatory lipid mediators. If successful, the proposed research will open a new area of investigation linked to AA metabolism and GPCR signaling in breast cancer cells.

"Hyper-arachidonic acid metabolism, PLA2s and colorectal carcinogenesis" (On-Going)
Colorectal cancer (CRC) is the 2nd leading cause of cancer related deaths in the United States. Each year there are 130,000 new diagnoses and 56,000 deaths attributed to CRC. Most cases of CRC are sporadic, however certain disease states predispose to the development of CRC. Inflammation has been associated with cancer and its risk increases in patients with inflammatory bowel disease depending on the extension of the affected area, age of onset, and duration. Rapid synthesis of arachidonoyl-phospholipid (AA-PL) and its simultaneous hyper-metabolism in transformed and malignant cells play a central role in producing the excess inflammatory molecules e.g., prostaglandins, thromboxanes and leukotrienes with the help of cyclooxygenase (COX) and lipoxygenase (LOX) enzymes, which
are responsible for cell proliferation, tumorigenesis, invasion and metastasis. The major goal of our laboratory is to better understand the interplay among various phospholipase-A2s during hyper-arachidonic acid metabolism. We found that pre- or post-treatment of HT29 cells with these inhibitors either potentiate or reverse many cellular events induced by short-term AA treatment, and suggest a possible interplay between sPLA2 and cPLA2 isotypes during hyper AA metabolism. We speculate that the catalysis of AA-PL by cPLA2 is dependent on the activation of sPLA2, and interactions between these enzymes are important for AA release and other cellular events. Recently, we were successful in knocking down cPLA2 and sPLA2 genes using siRNA. These knockdown cells will be useful in validating inhibitors data as well as testing our hypothesis. We are using high-throughput screening system to screen small molecules that will effectively block PLA2s and hyper-arachidonic acid metabolism. Our next goal is to test effective PLA2 inhibitors in tumor formation by APC min mouse or other suitable transgenic mouse that serve as models for studying colon cancer.
Dr. Jianjun Sun
The University of Texas at El Paso
Biological Sciences
(915) 747-8905
Email: jsun@utep.edu

Education

Postdoctoral fellowship, Microbiology and Molecular Genetics, Harvard Medical School, 2008.
Major: Bacterial Pathogenesis

Ph D, Medical College of Wisconsin, 2004.
Major: Department of Microbiology and Molecular Genetics
Dissertation Title: Host protein targeting of Pseudomonas aeruginosa ExoS and ExoT
ADP-ribosyltransferases

MS, China Agriculture University, 1998.

BS, China Agriculture University, 1995.

Professional Positions

Academic - Post-Secondary

Tenure- Track Assistant Professor, Department of Biological Sciences. (January 2009 - Present).

Postdoctoral fellow, Department of Microbiology and Molecular Genetics, Harvard Medical School. (August 2004 - December 2008).

PhD graduate student, Medical College of Wisconsin. (July 1999 - May 2004).

Teaching Assistant, Department of Molecular Biology and Biochemistry. (September 1998 - July 1999).

Teaching Assistant, China Agriculture University. (September 1996 - June 1997).

Licensures and Certifications

Lab safety and blood, UTEP-Environmental health and safety.

Professional Memberships


American Society of Protein Science. (June 2005 - Present).

The American Society for Microbiology. (January 2002 - Present).

Development Activities Attended

Awards and Honors

Graduate student travel award. (May 2003).
Graduate student travel award. (May 2002).

TEACHING

Teaching Experience

The University of Texas at El Paso
BIOL 4198, Special Problems, 1 course.
BIOL 4398, Special Problems, 1 course.
BIOL 5302, Resrch Biological Science, 2 courses.
BIOL 5329, Physiology of Bacterial Cell, 1 course.
BIOL 5399, Thesis, 1 course.
BIOL 6390, Independent Research, 3 courses.
MICR 2330, Microorganisms and Disease, 2 courses.

Non-Credit Instruction

Tutoring, RISE Scholars Program, 1 participant. (September 2009 - Present).

Directed Student Learning

Supervised Research, "Purification of protective antigen." (September 2009 - Present).
Advised: Ernesto Licon

Advised: Joaquin De Leon

Advised: Pedro Jacquez

Advised: Hector Marquez, Uriah Astorga

RESEARCH

Published Intellectual Contributions

Refereed Journal Articles


**Contributed Presentations**

Sun, J., Collier, R. J., A liposomal system to study anthrax toxin assembly and pore formation: effect of the receptor., "Gordon Research Conference -- Membrane Transport Protein," Biddeford, ME. (August 2006).

Sun, J., Annual meeting of P01AI056013, Polyvalent inhibitor of anthrax toxin action, "A liposomal system to study the roles of anthrax receptor in anthrax toxin assembly and pore formation," San Diego, CA. (May 2006).


Sun, J., Barbieri, J. T., 102nd American Society of Microbiology General Meeting, "Pseudomonas aeruginosa ExoS mediates the actin reorganization through RhoGDI," Salt Lake City, UT. (May 2002).

**Contracts, Grants and Sponsored Research**

**Grant**

Sun, Jianjun (Principal), "Membrane interaction of Mycobacterium tuberculosis ESAT6 and CFP10," State.
Research in Progress

"Mycobacterium tuberculosis ESX-1 secreted proteins" (On-Going)
Mycobacterium tuberculosis ESX-1 secreted proteins: While a lot of effort has been made to prevent and treat tuberculosis in the past century, Mycobacterium tuberculosis remains one of the world’s leading infectious agents, killing 2–3 million people each year and infecting one-third of the world’s population. The extreme success of M. tuberculosis as a pathogen is attributed to its remarkable ability to modulate and evade a variety of host defense mechanisms. Understanding the details of how M. tuberculosis manipulates host defense will help develop therapeutics and vaccines for treatment and prevention of tuberculosis. Recent research has shown that one genetic locus of M. tuberculosis, termed ESX1, is required for the virulence of M. tuberculosis, and ESX1 appears to encode a novel protein secretion system that secretes a number of proteins of unknown function. My lab is trying to understand the function of the ESX1 secreted proteins, particularly how they interact with host membranes and evade the host defense.

"Structure and function of anthrax toxin receptor" (On-Going)
Anthrax toxin is a tripartite A-B toxin composed of two A-moieties (enzymatic), called lethal factor (LF) and edema factor (EF), and one B-moiety (binding), called protective antigen (PA). Intoxication requires anthrax toxin bind to cell surface receptors and be internalized into the endosomes through receptor-mediated endocytosis. In endosome the acidic pH triggers PA undergo conformational change to insert into the endosomal membranes and form a protein-conducting channel that translocates LF/EF across the membranes into the cytosol. While two anthrax toxin receptors have recently been identified, neither is known about their roles in regulation of toxin pore formation nor their native cellular function. We are currently working on purification and structural determination of the receptors to further extend our knowledge of the receptor function.

"Tetanus toxin pore formation and membrane translocation" (Planning)
Tetanus toxin (TeNT) is a potent neurotoxin produced by gram-positive bacterium Clostridium tetani, causing spastic paralysis in central neurons. TeNT is synthesized as an inactive single-chain molecule (150 kDa), which is post translationally proteolyzed into an active di-chain with light chain (LC, ~50 kDa) and heavy chain (HC, ~100 kDa) linked by a disulfide bond. The HC includes binding (HC-BD) and translocation domains (HC-TD), and the LC is a zinc metalloprotease that cleaves SNARE proteins to block neurotransmitter release in central neurons. Intoxication requires the di-chain protein to undergo conformational change within acidified endosomes to form a protein-conducting channel (pore) by the HC that translocates the LC protease into the cytosol. Our lab seeks to understand the mechanism of TeNT pore formation and membrane translocation using a variety of molecular, biochemical and biophysical approaches in both liposome-based and cell-based model systems.
Dr. Liz A. Walsh
The University of Texas at El Paso
Biological Sciences
(915) 747-5421
Email: ewalsh@utep.edu

Education

Ph D, University of Nevada, 1992.
   Major: Environmental Biology

BS, University of Nevada.
   Major: Animal Biology

Professional Positions

Academic - Post-Secondary

Professor of Biological Sciences, University of Texas at El Paso. (September 2008 - Present).

Associate Professor of Biological Sciences, University of Texas at El Paso. (September 2000 - 2008).

Assistant Professor of Biological Sciences, University of Texas at El Paso. (September 1994 - 2000).

Postdoctoral Research Associate, Department of Zoology, Brigham Young University. (July 1993 - September 1994).


Lecturer, Population Ecology (Graduate Level), Rutgers University. (September 1992 - December 1992).

Professional


Professional Memberships

American Microscopical Society.

American Society of Limnology and Oceanography.

Ecological Society of America.

Sigma Xi.

Society of Environmental Toxicology and Chemistry.

Southwest Association of Naturalist.

Development Activities Attended

Workshop.

Workshop. (September 2007).

Seminar, "Ecological and Evolutionary Relationships of the Rotifera-," San Diego State University. (April 2002).

Workshop. (March 2000).


Workshop. (December 1997).

Workshop, "MIE Retreat." (December 18, 1996).

Conference Attendance, NASA Minority University-Space Interdisciplinary Network. (September 19, 1996).


Seminar, University of the Virgin Islands, St. Thomas. (May 23, 1995).


Awards and Honors

CoS Distinguished Service Award for Service to Students by Faculty. (February 2008).

University Awards Committee co-Nominee for Minnie Stevens Piper Teaching Award. (2006).

CoS Distinguished Service Award for Professional Staff nominee. (May 2006).


TEACHING

Teaching Experience

The University of Texas at El Paso
  BINF 5351, Intro. Bioinformatics I, 1 course.
  BINF 5352, Intro. Bioinformatics II, 1 course.
  BIOL 1306, Organismal Biology, 8 courses.
  BIOL 1332, Evolutionary Theory, 1 course.
  BIOL 1530, Seminar: Molecular approaches to Evol.Biol., 1 course.
  BIOL 3103, Introductory Biology, 5 courses.
  BIOL 3516, Biosystematics, 7 courses.
  BIOL 3560, Limnology, 2 courses.
  BIOL 4198, Special Problems, 3 courses.
Directed Student Learning

Dissertation Committee Chair.
Advised: Judith Rios

Master's Thesis Committee Chair.
Advised: Veronica De La Riva

Supervised Research, "Thesis."

Supervised Research, "Using rotifers to assay toxicity of cyanobacteria; Detection of stress proteins in rotifers using ELISA techniques."
Advised: Jennifer Apodaca

Supervised Research, "Competition between two rotifer species: microcosm experiments."
Advised: Michael Woods

Supervised Research, "Unpalatability of the colonial rotifer Sinatherina socialis to invertebrate predators." (2006 - Present).
Advised: Katrina Weber


  Advised: Juan Remeriz, Orestes Moldes, Michael Salazar, Christian Andresen, Katrina Weber


  Advised: Ashley Lopez

  Advised: Kassondra Meyer

  Advised: Alejandra Palomeque

  Advised: Alma Castanon

  Advised: Gerardo Guerrero

  Advised: Matthew Stensberg

  Advised: Nancy Salas Mercado, Leslie Chavez


Supervised Research, "Research (GR)." (1996 - 2007).

  Advised: Ryan Deregnier


  Advised: Claudia Ramirez, Fernanda De la Cerda


Master's Thesis Committee Chair, "Assessment of genetic diversity of fish and rotifers in the Rio Grande: A biomarker of anthropogenic stress (Cyprinus carpio, Dorosoma cepedianum,
Plationus patulus, Euchlanis dilatata)." (January 1, 2005).
Advised: Guadalupe Garbalena


Advised: Luisa Bonilla

Advised: R. Garcia

Advised: R. Garcia

Advised: Delia Cruz

Advised: Rachel Garcia

Master's Thesis Committee Chair, "Integrating life history and molecular responses to arsenic and heavy metals in a basal consumer (Rotifera: Plationus patulus) in a riverine food web." (January 1, 2003).
Advised: Judith Virginia Rios


Advised: Cynthia Batkin

Advised: John Ingle

Advised: Zaynab Bakir

Advised: Helen Brewer
Advised: Ruby Navarro

Advised: David Nevarez

Advised: Marissa Fout

Advised: Shelby Howard

Advised: Alicia Laureno

Advised: Belen Fierro

Supervised Research, "Biochemical characterization of rotifer resting eggs. MIE." (1999).
Advised: Stephen Edwards

Advised: Julie Sanchez

Supervised Research, "NSF HRD #9628568/MIE." (1998).
Advised: Alvaro Virgen

Advised: Houghton Jeff

Advised: Oscar Candia

Advised: Oscar Sanchez

Advised: Stacia Clement

Advised: Alejandro Armendariz

Advised: Erica Estrada

Advised: Pia Hoffman
Advised: Abraham Frias

Advised: Pia Hoffman

Advised: Pia Hoffman

Advised: Gabriela Sanchez

Advised: Kevin Cataldi

Advised: Alfred Andrade

Advised: Alma Lopez

Advised: Carmen Gallegos

Advised: Monica Sanchez

Advised: Isaac Estrada

Advised: Jennifer Barnett

Advised: Melissa Ortega

Advised: Erica Estrada

Advised: Hinojos Ralu

Advised: Ki Borello, Victor Montes

Advised: Michael Gaglio
RESEARCH

Published Intellectual Contributions

Refereed Journal Articles


Journal Articles


Other


Contributed Presentations


Walsh, E. A., Hamdan, L., Dynamic Deserts, "Dispersal and colonization of Philodina megalotrocha (Rotifera, Bdelloidea) in aquatic habitats in the Chihuahuan Desert.," Tempe, AR. (March 1, 2009).


Walsh, E. A., Ramirez, C. (Presenter & Author), Schroder, T., de la Cerda, F. (Presenter & Author), Society of Environmental Toxicology and Chemistry, "Life history responses to arsenic in clones of the rotifer Euchlanis dilatta from clean and metal contaminated sites," Montreal, Canada. (November 10, 2006).


Walsh, E. A., Schroder, T., Ramirez, C. (Presenter & Author), de la Cerda, F. (Presenter & Author), "Impacts of arsenic on life history characteristics of rotifers from an urban river.,” Ecological Society of America Memphis, TN. (August 2006).


Walsh, E. A., Schroder, T., 11th International Rotifer Symposium, "Cryptic speciation in the cosmopolitan Epiphanes senta complex (Monogononta, Rotifera).” (March 16, 2006).
Walsh, E. A., Schroder, T., 11th International Rotifer Symposium, "Cryptic speciation in the cosmopolitan Epiphanes senta complex (Monogononta Rotifera)," Mexico City, Mexico. (March 16, 2006).


Walsh, E. A., Rios, J. V. (Presenter & Author), Ortíz, 11th International Rotifer Symposium, "Life history responses of a rotifer (Plat/nous patulus to mixtures of arsenic and heavy metals," Mexico City, Mexico. (March 16, 2006).


Walsh, E. A., Morgan, C. (Presenter & Author), Gonzalez-Graf, C. (Presenter & Author), Mackay, W., "Genetic variation within and between colonies of Crematogaster depilis and C. larreae," SACNAS, Denver, CO. (October 1, 2005).

Walsh, E. A., Morgan, C. (Presenter & Author), Gonzalez-Graf, C. (Presenter & Author), Mackay, W., "Genetic variation within and between colonies of Crematogaster depilis and C. larreae," SACNAS, Denver, CO. (October 1, 2005).


Walsh, E. A., Schroder, T., Cryptic speciation in the cosmopolitan Epiphanes senta complex, "Genetic differentiation within populations and among geographical regions.," Ecological Society of America, Montreal, Canada. (August 13, 2005).


Walsh, E. A., Rios Arana, J. V. (Presenter & Author), Gardea-Torresdey, "Integrating life history and molecular responses to arsenic and heavy metals in a basal consumer in a riverine food web.," American Society of Limnology and Oceanography, Santiago, Spain. (June 12, 2005).


Walsh, E. A., Howard, S. (Presenter & Author), Arroyo, L. (Presenter & Author), Schroeder, T., “Patterns of diapause and sexual reproduction of Hexarthra in temporary aquatic habitats of the Chihuahuan desert (Hueco Tanks state Historic Site),” American Society of Limnology and Oceanography, Savannah, GA. (June 2004).


Walsh, E. A., Rios-Arana, J. V. (Presenter & Author), Gardea-Torresdey, J. L., 10th International Rotifer Symposium, “Induction of heat shock protein 60 (HSP60) in rotifers exposed to Arsenic and heavy metals,” Illmitz, Austria. (June 13, 2003).


Walsh, E. A., Rios, J. V. (Presenter & Author), American Society of Limnology and Oceanography, "Induction of hsp60 in rotifers exposed to arsenic and heavy metals.," Hampton/ASLO Minority Program, Salt Lake City. (January 14, 2003).


Walsh, E. A., Wallace, R. L., Bonilla, L. (Presenter & Author), American Society of Limnology and Oceanography, "A species inventory of the Rotifera of the springs and ephemeral waters of Big Bend National Park (Texas, USA)," Victoria, B.C. (June 14, 2002).


Walsh, E. A., Rios, J. V. (Presenter & Author), Gardea-Torresdey, J. L., "Impact of multi-metal solutions on a basal member of a riverine food web (Rotifera: Platinus patulus)," American Society of Limnology and Oceanography. (June 14, 2002).


Walsh, E. A., Harris, L. W. (Presenter & Author), Fuller, C. A., Southwestern association of Naturists, "Should I stay or should I go? Dispersal of a neotropical termite.," Cuernavaca, Mexico. (April 28, 2002).


Walsh, E. A., De La Riva, V. (Presenter & Author), "Molecular systematics of the Brachionidae (Phylum Rotifera) based on internal transcribed spacers (ITS) of the nuclear ribosomal gene complex.," Society of Integrative and Comparative Biology, Chicago, IL. (January 7, 2001).


Walsh, E. A., Cruz, D. (Presenter & Author), MIE Student Research Expo, "Genetic Variation of Fairy Shrimp (Anostraca), Tadpole Shrimp (Notostraca), and Clam Shrimp (Conchostra), That Inhabit Temporary and Permanent Aquatic Habitats. Phase 1," San Juan, Puerto Rico. (October 1999).


Walsh, E. A., Howard, S. (Presenter & Author), Bonilla, L. (Presenter & Author), "Timing of sexual reproduction in populations of cyclic parthenogens occurring in temporary desert ponds.." Texas Tech University Health Sciences Center, Lubbock, TX. (February 1999).


Walsh, E. A., Frias, A. (Presenter & Author), Bonilla, L. (Presenter & Author), Special Symposium on Temporary Habitats., "Rotifers in temporary desert ponds: effects of environmental factors.," ASLO Minority Program Sponsorship, St Louis, MO. (June 12, 1998).


Contracts, Grants and Sponsored Research

Educational

Doser, Diane I (Co-Principal), Walsh, Elizabeth A (Principal), Lieb, Carl S (Co-Principal), Lougheed, Vanessa L (Co-Principal), Smith, Russell C (Co-Principal), "CCLI: Improving capacities for environmental science education in the," Federal.


Grant
Cox, Marc B (Co-Principal), Walsh, Elizabeth A (Principal), Lee, Wen-Yee (Co-Principal), Lougheed, Vanessa L (Co-Principal), "Detecting chemicals of emerging concern in the El Paso/Ciudad Juarez stretch of the Rio Grande."

Cox, Marc B (Co-Principal), Lee, Wen-Yee (Principal), Walsh, Elizabeth A (Co-Principal), "Developing a chemical and biological monitoring system along the El Paso/Jaurez stretch of the Rio Grande," State.

Gosselink, Kristin (Supporting), Natalicio, Diana S (Principal), Kirken, Robert A (Supporting), Garza, Kristine M (Supporting), Aguilera, Renato (Supporting), Almeida, Igor C (Supporting), Johnson, Kyle L (Supporting), Das, Siddhartha (Supporting), Elizey, Joanne T (Supporting), Walsh, Elizabeth A (Supporting), Han, Kyung-An (Supporting), "Border Biomedical Research Center," Federal, $1,400,000.00. (June 1, 2009 - May 31, 2014).

Leung, Ming-Ying (Principal), Walsh, Elizabeth A (Co-Principal), Kreinovich, Vladik Y (Co-Principal), Aley, Stephen B (Co-Principal), "UBM-Institutional: Undergraduate Training in Bioinformatics," Federal, $870,000.00. (September 1, 2009 - August 31, 2013).

Leung, Ming-Ying (Principal), Walsh, Elizabeth A (Co-Principal), Kreinovich, Vladik Y (Co-Principal), Aley, Stephen B (Co-Principal), "UBM-Institutional: Undergraduate Training in Bioinformatics," Federal, $870,000.00. (September 1, 2009 - August 31, 2013).

Aley, Stephen B (Principal), Leung, Ming-Ying (Co-Principal), Walsh, Elizabeth A (Co-Principal), Kreinovich, Vladik Y (Co-Principal), "Enhancement of Quantitative Science in Biology Curricula," Federal, $1,290,000.00. (July 1, 2009 - June 30, 2013).


**Research in Progress**

"Domestic Violence" (On-Going)

"Enhancement of Quantitative Science in Biology Curricula" (On-Going)
   Development and implementation of strategies to increase level of quantitative science skills in students in the Biology and Microbiology majors. Also to impact decisions of these students to continue in post-graduate studies.

"UBM Institutional: Undergraduate Training in Bioinformatics" (On-Going)
   The major goal of this project is to establish an undergraduate training program of bioinformatics research at UTEP and to develop four research areas: biomolecular sequence analysis, ecoinformatics and phylogenetic analysis, microarray and proteomics data analysis, and molecular structure prediction.

**SERVICE**

**Department Service**

Advisory Committee. (2006 - Present).

PhD Program Examination Committee. (2002 - Present).
Coordinator, Toxicology Unit of the BBRC. (2001 - Present).
Committee Chair, Evolutionary Geneticist Search Committee. (2007).
Committee Chair, PhD Examination Committee in Ecology. (2005 - 2006).
Committee Member, PhD Examination Committee in Toxicology. (2005 - 2006).
Committee Chair, Strategic Planning Committee. (1998).
Ad Hoc Committee on Teaching Effectiveness. (1995).

**College Service**

Environmental Science Advisory Committee.
MARC Candidate review committee.
Staley Committee.
ADVANCE Faculty Fellow. (2007).
Search Committee for Environmental Science Coordinator. (2007).
Search Committee for Environmental Science Coordinator. (2003).


**University Service**

University Outstanding Thesis and Outstanding Dissertations Committee. (May 2005 - Present).

Emeritus Professor Committee. (2006).


**Professional Service**

Co-host ACT radio show.

Committee Member, El Paso Regional Group of Sierra Club.

Committee Chair, National Sierra Club: Wildlife and Endangered Species Committee.


**Public Service**

Co-Host ACT radio show, KTEP.

Board Member, Vegetarian Society of El Paso.


Hueco Tanks Guide Training. (June 7, 2008 - November 22, 2008).

Talk on the Border Wall & Wildlife. (October 2008).

Talk on the Border Wall and Wildlife. (September 2008).

Talk on Dispersal of Desert Zooplankton. (June 17, 2008).

Panelist for College of Health Science doctoral mentoring seminar. (January 2006).
Faculty mentor for the ESA SEEDS Chapter. (2005).


"Escape from the cookie jar: Consumption or freedom in the modern world". (July 1999).

Expanding your Horizons. No bones about it.. (January 30, 1999).


Engineering and Science Expo Outreach Fiar presentation:No bones about it.. (February 21, 1998).


"Does you Dinner come with Desert". (September 25, 1997).

Science Prep Summer Orientation Program. (August 1997).

"Does you Dinner come with Desert". (May 31, 1997).

Judged Sun Country Regional Science Fair. (April 5, 1997).

"Opportunities in Environmental Science". (March 26, 1997).

Engineering and Science Expo.. (1996).

Gave presentation to UTEP dormitory students on "Human Industrial High-Tech versus the environment Is it worth the cost?". (April 30, 1996).

Judged Science Fair for Ysleta Secondary Science Fair,. (March 16, 1996).

Andress High School Biology Department Tour; 11-12th Graders. (February 28, 1996).

UTEP Mother-Daughter Program. (June 1, 1995).

Career Day Participant Desert View Middle School. (April 27, 1995).

Judged poster session for UTEP Student Research Expo. (April 11, 1995).


**Consulting**

Academic.

Academic.

Academic.

Academic.
Quality Education for Minorities/NSF BIO Directorate Workshop on Grant writing. (April 2007).
Awards and Honors

Second Place Award, Poster Session of the 6th Biophysics and Cellular Biology Symposium, Purdue University.

TEACHING

Teaching Experience

The University of Texas at El Paso

CHEM 4176, Introduction to Research, 2 courses.
CHEM 4330, Biochem: Structure/Function, 1 course.
CHEM 4332, Biochem.: Dynamics/Information, 2 courses.
CHEM 4376, Introduction to Research, 1 course.
CHEM 5195, Graduate Seminar, 2 courses.
CHEM 5396, Graduate Research in Chemistry, 3 courses.
CHEM 5398, Thesis, 2 courses.
CHEM 5399, Thesis, 1 course.
CHEM 6195, Graduate Seminar, 2 courses.
CHEM 6196, Graduate Research in Chemistry, 3 courses.
CHEM 6396, Graduate Research in Chemistry, 3 courses.
CHEM 6398, Dissertation, 1 course.
CHEM 6399, Dissertation, 1 course.

RESEARCH

Published Intellectual Contributions

Conference Proceedings


Journal Articles


Contributed Presentations


Xiao, C., Bator Kelly, C. M., Chipman, P. R., Kuhn, R. J., Rossman, M. G., Ninth Annual Purdue University BioPhysics Symposium, "Interaction Between Three Picornaviruses And Their Common Receptor ICAM-1," Purdue University, West Lafayette, IN. (2003).


Xiao, C., Bator Kelly, C. M., Bowman, V. D., Rieder, E., He, Y., hebert, B., Bella, J., Baker, T. S., Wimmer, E., Kuhn, R. J., Rossman, M. G., Sixth Annual Purdue University BioPhysics

Contracts, Grants and Sponsored Research

Equipment

Johnson, Kyle L (Co-Principal), Bernal, Ricardo A (Principal), Xiao, Chuan (Co-Principal), Noveron, Juan C (Co-Principal), Chianelli, Russell R (Co-Principal), Das, Siddhartha (Supporting), Cox, Marc B (Supporting), "MRI: Acquisition of a Field Emission Gun Transmission Electron Microscope for Biological Structure Determination,” Federal, $1,259,954.00. (August 1, 2009 - July 31, 2012).
Dr. Jianying Zhang  
The University of Texas at El Paso  
Biological Sciences  
(915) 747-6995  
Email: jzhang@utep.edu

Education

Major: Cancer Autoimmunity

Ph D, Xia'men University, 1995.  
Major: Tumor Molecular Biology and Tumor Immunology

MPH, Xi'an Jiaotong University School of Medicine (Former Xi'an Medical University), 1987.  
Major: Epidemiology

MD, Zhengzhou University School of medicine (Former Henan Medical University), 1984.  
Major: Medicine

Professional Positions

Professional

Adjunct Visiting Professor, Zhengzhou University School of Medicine, Zhengzhou, China..  
(September 2001 - Present).

Adjunct Visiting Professor, School of Life Sciences, Xia'men University, Xia'men, China.. (July 2000 - July 2003).

Lecturer/ Assistant Professor, Department of Epidemiology, School of Public Health, Zhengzhou University School of Medicine (Former Henan Medical University), China. (August 1987 - November 1995).

Professional Memberships

Member of International Society for Preventive Oncology. (2005 - Present).

Member of Sigma Xi, The Scientific Research Society,. (2002 - Present).

Active Member of American Association for Cancer Research. (1999 - Present).

Member of International Epidemiology Association. (1997 - Present).

Development Activities Attended

Workshop, "Cancer Molecular Epidemiology," AACR. (April 2009).

Workshop, “Grantsmanship, and Advanced Grant Writing,” RCMI/NIH. (December 2008).

Seminar, "Tumor-associated antigens as reporters in cancer," Cancer Institute, Chinese Academy of Medicine. (July 2008).

Seminar, "Cancer Autoantibodies and Cancer Diagnosis," Medical University of South Carolina. (April 2008).

Workshop, "AACR (American Association for Cancer Research) Methods Workshops: (1) Molecular cancer epidemiology; (2) Epigenomics; (3) 11th Annual Grant Writing Workshop," AACR. (April 2008).

Seminar, "Cancer Autoantibodies and Cancer Diagnosis," Xinxiang Medical University. (June 2007).

Seminar, "Identification of tumor-associated antigens in immunodiagnosis of cancer," Cancer Institute, Chinese Academy of Medicine. (June 2007).


Workshop, "AACR (American Association for Cancer Research) Methods Workshops: (1) Approaches to Cancer Genetics in Humans; (2) Cancer Biomarkers; (3) Professional Advancement Series," AACR. (April 2007).

Workshop, "The fourth ARCH (Advanced Research Cooperation in Environmental Health) Grant Writing Workshop.," UTEP. (April 2007).


Seminar, "Identification and characterization of tumor-associated antigens as markers in cancer detection," Huaxi Medical Center, Sichuan University. (June 2006).

Workshop, "NCI/NIH Grants Section: (1) The NCI’s early detection research network: Bring biomarker discovery to clinical practice; (2) Tips on NIH grant processes and opportunities for cancer research funding .," NCI/NIH. (April 2006).


Seminar, "Molecular biotechniques and its application in biomedical research," Center for Disease Control. (June 2005).

"NIH Grants Section: Changes in Review and Funding Opportunities and Funding Opportunities.," NIH. (March 2004).


Workshop, "Design Well to Teach Well – A special session on course and syllabus design for Faculty." (January 2004).

"Third Year Review – How do you prepare for it? What is the process?," UTEP. (December 2003).

Workshop, "CATS – What can they do for you?,” UTEP. (September 2003).

"NIH Grants Section: (1) Changes in Review and Funding Opportunities, (2) Funding Opportunities.,” NIH. (July 2003).


Workshop, "Gaining Perspective on Tenure,” UTEP. (May 2003).


Workshop, "Developing Bioinformatics Programs, Biomedical Supercomputing Initiative,” NIH. (July 8, 2002 - July 19, 2002).

"Fifth Annual AACR (American Association for Cancer Research) Associate Member Grant Writing Workshop,” AACR. (April 2002).

Workshop, "Directing Theses and Dissertations – What graduate students need from faculty,” UTEP. (January 2002).

TEACHING

Teaching Experience

The University of Texas at El Paso

BINF 5352, Intro. Bioinformatics II, 2 courses.
BIOL 4198, Special Problems, 2 courses.
BIOL 4298, Special Problems, 2 courses.
BIOL 4398, Special Problems, 4 courses.
BIOL 5301, Select Adv Topics Biol Science, 1 course.
BIOL 5302, Resrch Biological Science, 4 courses.
BIOL 5352, Intro Bio II: Gene Find/Compar, 1 course.
BIOL 5398, Thesis, 2 courses.
BIOL 5399, Thesis, 1 course.
BIOL 6390, Independent Research, 4 courses.
BIOL 6490, Independent Research, 1 course.
MICR 2330, Microorganisms and Disease, 3 courses.
MICR 4329, Epidemiology, 1 course.

Directed Student Learning

Supervised Research. (June 2009 - Present).
Advised: Marco Rodriguez

Supervised Research. (January 2009 - Present).
Advised: Dolores Dorado

Supervised Research. (January 2009 - Present).
Advised: Lucy R. Camarena

Dissertation Committee Chair. (September 2008 - Present).
Advised: Bo Peng
Dissertation Committee Member. (September 2008 - Present).
  Advised: Amanda Gonzalez

Master's Thesis Committee Chair. (September 2008 - Present).
  Advised: Alejandra Fernandez

Master's Thesis Committee Chair. (September 2008 - Present).
  Advised: Maribel Chavez

  Advised: Patricia D. Garcia

Dissertation Committee Member. (2006 - Present).
  Advised: Debarshi Roy

Dissertation Committee Member. (2006 - Present).
  Advised: Marian Viveros

Dissertation Committee Member. (2006 - Present).
  Advised: Ravi K. Samala

Dissertation Committee Member. (2006 - Present).
  Advised: Yong Zhao

Dissertation Committee Member. (2005 - December 2009).
  Advised: Kanti M. Patel

Supervised Research. (August 2009).
  Advised: Xin Mu

Supervised Research. (June 2009 - August 2009).
  Advised: Yessenia Miranda

  Advised: Hector Lopez

  Advised: Israel Sanchez Urbina

Master's Thesis Committee Member. (December 2008).
  Advised: Hong Yue

Dissertation Committee Member. (May 2008).
  Advised: Kok Sun Looi

Master's Thesis Committee Member. (August 2007).
  Advised: Candice A. Sifuentes

Dissertation Committee Member. (May 2007).
  Advised: Dayle B. Sharp

Dissertation Committee Member. (May 2007).
  Advised: Kevin Wu
Dissertation Committee Chair, "Identification of tumor-associated antigens as markers for immunodiagnosis of human cancers." (May 1, 2007). Advised: Yao Chen

Master's Thesis Committee Member. (December 2005). Advised: Yong Zhao

Master's Thesis Committee Chair. (December 2004). Advised: Kok Sun Looi

Awards and Honors

Excellent Youth Teacher Award of Henan Province, P. R. CHINA., Henan Province, P. R. CHINA. (1993).

Epidemiology Teaching Research Program., Henan Medical University, P. R. CHINA.. (1992).

RESEARCH

Published Intellectual Contributions

Books


Book Chapters


Refereed Journal Articles


Other


**Invited Presentations**

Zhang, J., Invited Seminar by Beijing Institute of Microbiology and Epidemiology, "Autoimmunity and Cancer," Beijing Institute of Microbiology and Epidemiology, Beijing, China. (August 2009).

Zhang, J., Invited Seminar by Zhengzhou University School of Medicine, "Cancer Biomarker Development," Zhengzhou University School of Medicine, Zhengzhou, China. (August 2009).

**Contributed Presentations**


Contracts, Grants and Sponsored Research

Grant

Zhang, Jianying (Principal), "Cancer Autoantibody Biomarker Developmental laboratory," Federal.

Zhang, Jianying (Principal), "Development of customized tumor-associated antigen biomarker array in immunodiagnosis of breast cancer," Foundation.

Zhang, Jianying (Principal), "Identification and validation of tumor-associated antigens (TAAs) as biomarkers in breast cancer," Foundation.

Zhang, Jianying, "Border Biomedical Research center From Research Centers at Minority Institutions," Federal, $12,379,750.00. (October 2009 - September 2014).


Zhang, Jianying (Principal), "Cloning of cDNAs encoding tumor-associated antigens," Industry, $6,000.00. (September 2008 - May 2009).


Zhang, Jianying (Principal), "Autoantibodies to Tumor-associated antigens as serological markers for detection and diagnosis of liver cancer," Foundation, $75,000.00. (January 2004 - March 2007).


Zhang, Jianying (Principal), "Molecular identification of tumor-associated antigens as markers in hepatocellular carcinoma," The University of Texas at El Paso, $4,400.00. (January 2005 - December 2005).


Zhang, Jianying (Principal), "Tumor-associated antigen-antibody systems as markers for diagnosis of cancer," State, $75,000.00. (December 2001 - December 2004).


Zhang, Jianying (Co-Principal), "Surveying the Genes for Fat Metabolic Enzymes in Patients with Lung Cancer from the Border Community: Identification of Critical Genes that are Involved in "Unchecked" Cell Division," Foundation, $18,000.00. (June 2003 - August 2004).


Awards and Honors

BRFSS (Behavioral Risk Factor Surveillance Survey) Award, Paso del Norte Health Foundation (PdNHF) and the Center for Border Health Research (CBHR). (January 2008).

BRFSS (Behavioral Risk Factor Surveillance Survey) Award, Paso del Norte Health Foundation (PdNHF). (December 2005).

UTEP ADVANCE Initiative Award, "Molecular identification of tumor-associated antigens as markers in hepatocellular carcinoma". (January 2005).

The Second Award from Jiangxi Province Scientific Commission, P. R. CHINA., Study of Circulating Immune Complexes with IgG / Complement Specificity.. (1996).

The Third Award from Henan Province Educational Commission , P. R. CHINA., Book: Research and Practice In Liver Diseases.. (1996).

The Third Award from Henan Province Health Bureau, A Seroepidemiological Study of Hepatitis D Virus (HDV) Infection in Henan,. (1996).


The Third Award from Henan, Book: Research Advance In Viral Liver Diseases.. (1995).

A Study of Protective Value of Isolated Anti-HBs Positivity in Human Sera., Henan Province Health Bureau & The Second Award from Henan Province Scientific Commission, P. R. CHINA.. (1994).

Excellent Young Scientist Award from Henan Province Government, Henan Province Government, P. R. CHINA. (1994).


Research in Progress

"Autoantibodies to tumor-associated antigen (TAA) arrays as biomarkers in immunodiagnosis of cancer" (On-Going)
“Epidemiologic studies relating genetic, environmental, dietary and lifestyle factors to the etiology of liver cancer in Hispanic population” (On-Going)

SERVICE

Department Service

Ph.D. Graduate Advisor in Biology. (June 2008 - Present).

Textbook Liaison. (September 2003 - August 2007).

Committee Member, Faculty Search Committee for Toxicologist. (August 2004).

Committee Member, Faculty Search Committee (IDU) for Microbiologist. (August 2003 - May 2004).

College Service

Committee Member, COS Graduate Curriculum Committee. (June 2008 - Present).

University Service

Committee Member, UTEP Student Scholarship Committee. (June 2007 - Present).

Committee Member, UTEP Faculty Senate. (August 2004 - May 2007).

Committee Member, UTEP Library Committee. (August 2004 - May 2007).

Professional Service


Reviewer, Grant Proposal, National Natural Science Foundation of China (NSFC). (2005 - Present).


Reviewer, Ad Hoc Reviewer, Ethnicity and Diseases. (2009).


Committee Member, NIH-MHIRT (Minority Health and Health Disparities International Research Training) Program Advisory Committee (This program is currently run by Winston-Salem State University). (2003 - 2006).