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Department of Biological Sciences
University of Texas at El Paso
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EDUCATION

- 1999 - 2004 **Doctor of Philosophy in Microbiology**
Department of Microbiology and Molecular Genetics
Medical College of Wisconsin, Milwaukee, WI
Dissertation: Structural and functional
characterization of Pseudomonas aeruginosa ExoS and
ExoT
Chair: Dr. Joseph T. Barbieri
- 1998 - 1999 **PhD student**
Department of Molecular Biology and Biochemistry
Wesleyan University, Middletown, CT
- 1995 - 1998 **Master of Science**
Department of Biochemistry and Molecular Biology
China Agriculture University, Beijing, China
- 1991 - 1995 **Bachelor of Science**
Department of Biochemistry and Molecular Biology
China Agriculture University, Beijing, China

PROFESSIONAL EXPERIENCE

- 2015 - **Associate Professor** of Department of Biological
Sciences, Deputy Director of Infectious Diseases and
Immunology, Border Biomedical Research Center,
University of Texas at El Paso, El Paso, TX
- 2009 - 2015 **Assistant Professor** of Department of Biological
Sciences, Deputy Director of Infectious Diseases and
Immunology, Border Biomedical Research Center.
University of Texas at El Paso, El Paso, TX
- 2004 - 2008 **Postdoctoral Research Fellow**
Department of Microbiology and Molecular Genetics
Harvard Medical School, Boston MA
Project: Pore formation and membrane translocation of
anthrax toxin
Mentor: Dr. R. John Collier
- 1999 - 2004 **Graduate Research Assistant**
Department of Microbiology and Molecular Genetics
Medical College of Wisconsin, Milwaukee, WI
Project: Structural and functional characterization
of Pseudomonas aeruginosa ExoS and ExoT
Mentor: Dr. Joseph T. Barbieri
- 1998 - 1999 **Graduate Teaching Assistant**
Department of Molecular Biology and Biochemistry
Wesleyan University, Middletown, CT
Project: yeast genetics - structure and function of
chromatin

1995 - 1998 Mentor: Dr. Scott Holmes
Graduate Teaching Assistant
Department of Biochemistry and Molecular Biology
China Agriculture University, Beijing, China

AWARDS AND HONORS

05/2012 UTEP Outstanding Performance Award for outstanding
performance in securing extramural funding
11/2010 UTEP COURI award (Mentor)
05/2003 Graduate student travel award, Medical College of
Wisconsin, Milwaukee, WI
05/2002 Graduate student travel award, Medical College of
Wisconsin, Milwaukee, WI
1999 - 2004 Graduate Fellowship, Medical College of
Wisconsin, Milwaukee, WI

PROFESSIONAL AFFILIATIONS

American Society of Microbiology
Biophysical Society
Sigma Xi - The Research Society
American Society of Protein Science

RESEARCH INTEREST

My research focuses on the molecular mechanism how bacterial pathogens cause human diseases. I am particularly interested in understanding the roles of bacterial toxins and other virulent factors in bacterial pathogenesis, and using them as model systems to understand fundamental processes of biological sciences including protein-membrane interaction, protein pore formation and membrane translocation. Results from the research will lead to development of novel therapeutics and vaccines against infectious agents. In addition, I am also interested in engineering toxins into anti-cancer agents for targeted cancer therapy. Current research projects include 1) Structural and functional characterization of anthrax toxin-receptor interaction; 2) Engineering anthrax toxin for targeted cancer therapy; 3) Structural and functional characterization of *Mycobacterium tuberculosis* ESX-1 secreted proteins and development of novel vaccines and diagnosis for tuberculosis control.

PATENT: Non-cytolytic ESAT-6 mutants as novel tuberculosis vaccines

PUBLICATIONS

Manuscripts in Submission:

1. Khan A, Bakhru P, Soudani E, Saikolappan S, Singh C, Estrella J, Lewis D, Zhang D, Pasare C, Ma Y, **Sun J**, Hunter R, Eissa

T, Dhandayuthapani S, and Jagannath C. A recombinant BCG vaccine expressing a novel Toll-like receptor-2 activating mycobacterial peptide induces a stronger and longer lasting anti-tuberculosis immunity through the induction of central memory T cells.

(Submitted to Immunology and Cell Biology (Nature group of publications))

Manuscripts in Preparation:

1. Jacquez P and **Sun J**. Roles of anthrax toxin receptor 2 in anthrax toxin action. (Invited review for Toxin Journal)
2. Xie L, Qian W, **Sun J** and Zou B. Engineering nanobiomaterials for improved tissue regeneration. (Invited Chapter for Book "Nanobiomaterials: Classification, Fabrication and Biomedical Applications")
3. Peng X, Jiang G, Liu W, Zhang Q, Qian W and **Sun J**. Characterization of the differential membrane-interacting activities of ESAT-6 from *Mycobacterium tuberculosis* and *Mycobacterium smegmatis*.
4. Jacquez P, Alshrif N, Puschhof J, **Sun J**. Human protein disulfide isomerase facilitated anthrax toxin action through modulating receptor disulfide bonds.
5. Zhang Q*, Liu W, Jiang G, **Sun J**. A single residue of ESAT-6 dictates the virulence of *Mycobacterium tuberculosis* in invasion of macrophages.

Published Research Articles

1. Chen J, Wang Z, Bi D, Hou Y, Zhao Y, **Sun J*** and Peng X*. Gga-miR-101-3p Plays a Key Role in Mycoplasma gallisepticum (HS Strain) Infection of Chicken (2015). International Journal of Molecular Sciences. Vol 16(12)pp28669-28282 (*:co-corresponding authors)
2. Hu F, Zhao C, Bi D, Tian W, Chen J, **Sun J***, Peng X*. Mycoplasma gallisepticum (HS strain) surface lipoprotein pMGA interacts with host apolipoprotein A-I during infection in chicken. Applied Microbiology and Biotechnology (2015). doi:10.1007/s00253-015-7117-9 (*:co-corresponding authors)
3. Jacquez P, Avelia G, Boone K, Puschhof J, Sauter R, Altlyev A, Arigi E, Almeida I, Sherman M, Xiao C, **Sun J**. The disulfide bond Cys255-Cys279 in the immunoglobulin-like domain of anthrax toxin receptor 2 is required for membrane insertion of anthrax protective antigen pore (2015). PLoS ONE vol. 10(6) p.e0130832
4. Ma Y, Keil V, **Sun J**. Characterization of *Mycobacterium tuberculosis* EsxA membrane insertion: Roles of N- and C-terminal flexible arms and central helix-turn-helix motif. Journal of Biological Chemistry (2015) 290: 7314-7322.
5. Acosta Y, Zhang Q, Chuang Xiao, Hugues Ouellet, **Sun J**, Li C. Imaging mycobacterial cytosolic translocation in macrophages with a

two-photon fluorescence energy transfer microscopy. *Biomedical Optics Express*. 2014 vol. 5 (11) p. 3990. (Sun and Li are co-corresponding authors)

6. Avila G, Ramirez R, Hildenbrand Z, Jacquez P, Chiocca S, **Sun J**, Rosas-Acosta G, Xiao C. Expression and *In Vitro* Functional Analyses of Gam1 a Global SUMOylation inhibitor. *Protein Expression and Purification*. 105 (2015) 47-53.
7. Jacquez P, Lei N, Weigt D, Xiao C, **Sun J**. (2013) Expression and purification of the functional ectodomain of human anthrax toxin receptor 2 in E. coli Origami B cells with assistance of bacterial Trigger Factor. *Protein Expression and Purification*. 2013 vol. 95c pp. 149-155.
8. Mendez T, Chatterjee A, Duarte T, Gazos-Lopes F, Robles-Martinez F, Roy D, **Sun J**, Maldonado R, Roychowdhury S, Almeida I, and Das S. (2013) Glucosylceramide Transferase Activity Is Critical for Encystation and Viable Cyst Production by an Intestinal Protozoan, *Giardia lamblia* *J. Biol. Chem.* 2013 288: 16747-16760. First Published on April 14, 2013, doi:10.1074/jbc.M112.438416
9. De Leon J, Jiang G, Ma Y, Rubin E, Fortune S, and **Sun J** (2012) Mycobacterium tuberculosis ESAT-6 exhibits a unique membrane-interacting activity that is not found in its ortholog from non-pathogenic Mycobacterium smegmatis *J. Biol. Chem.* jbc.M112.420869. First Published on November 13, 2012, doi:10.1074/jbc.M112.420869
10. Wimalasena DS, Janowiak BE, Lovell S, Miyagi M, **Sun J**, Zhou H, Hajduch J, Pooput C, Kirk KL, Battaile KP, Bann JG[®] (2010) Evidence that histidine protonation of receptor-bound anthrax protective antigen is a trigger for pore formation. *Biochemistry*. 2010 Aug 24;49(33):6973-83
11. **Sun J**, Collier RJ (2010) Disulfide Bonds in the Ectodomain of Anthrax Toxin Receptor 2 Are Required for the Receptor-Bound Protective-Antigen Pore to Function. *PLoS ONE*. 2010 May; 5(5): e10553.doi:10.1371/journal.pone.0010553 (Sun was the corresponding author)
12. Vernier G, Wang J, Jennings LD, **Sun J**, Fischer A, Song L, Collier RJ. Solubilization and characterization of the anthrax toxin pore in detergent micelles. *Protein Sci*. 2009 Sep;18(9):1882-95.
13. Lang AE, Neumeyer T, **Sun J**, Collier RJ, Benz R, and Aktories K. Amino acid residues involved in membrane insertion and pore formation of Clostridium botulinum C2 toxin. *Biochemistry*. 2008 Aug 12;47(32):8406-13. Epub 2008 Jul 18.
14. **Sun J**, Lang AE, Aktories K, Collier RJ; Phenylalanine 427 of anthrax protective antigen functions in both pore formation and protein translocation. *Proc. Natl. Acad. Sci. USA*. 2008 Mar 18; 105(11): 4346-51. Epub 2008 Mar 11.
15. **Sun J**, Vernier G, Wigelsworth DJ and Collier RJ; Insertion of

- anthrax protective antigen into liposomal membranes: effect of a receptor. *J Biol Chem*. 2007 Jan 12; 90(1): 165-83. Epub 2006 Nov 14.
16. Deng Q, **Sun J**, Barbieri JT; Uncoupling Crk signal transduction by Pseudomonas exoenzyme T. *J Biol Chem*. 2005 Oct 28; 280(43):35953-60. Epub 2005 Aug 25.
 17. **Sun J** and Barbieri JT; ExoS Rho GTPase-activating protein activity stimulates reorganization of the actin cytoskeleton through Rho GTPase guanine nucleotide disassociation inhibitor. *J Biol Chem*. 2004 Oct 8; 279(41):42936-44. Epub 2004 Aug 2.
 18. **Sun J**, Maresso AW, Kim JJ and Barbieri JT; How bacterial ADP-ribosylating toxins recognize substrates. *Nat Struct Mol Biol*. 2004 Sep; 11(9):868-76. Epub 2004 Aug 15.
 ➤ This paper was evaluated and recommended by Faculty of 1000 - Biology, a post-publication peer review.
 19. Papacs LA, Sun Y, Anderson EL, **Sun J**, Holmes SG; REP3-mediated silencing in Saccharomyces cerevisiae. *Genetics*. 2004 Jan; 166(1):79-87.
 20. **Sun J** and Barbieri JT; Pseudomonas aeruginosa ExoT ADP-ribosylates CT10 regulator of kinase (Crk) proteins. *J Biol Chem*. 2003 Aug 29; 278(35):32794-800. Epub 2003 Jun 13.
 ➤ This paper was evaluated and recommended by Faculty of 1000 - Biology, a Post-publication peer review.
 21. Krall R*, **Sun J***, Pederson KJ and Barbieri JT; In vivo rho GTPase-activating protein activity of Pseudomonas aeruginosa cytotoxin ExoS. *Infect Immun*. 2002 Jan; 70(1):360-7. (*equal contribution authors)

Books, chapters & reviews

22. Peng, X. & **Sun, J**. Mechanism of ESAT-6 membrane interaction and its roles in pathogenesis of Mycobacterium tuberculosis. *Toxicon* (2015). doi:10.1016/j.toxicon.2015.10.003
23. **Sun J** (2012). Roles of Cellular Redox Factors in Pathogen and Toxin Entry in the Endocytic Pathways, *Molecular Regulation of Endocytosis*, Brian Ceresa (Ed.), ISBN: 978-953-51-0662-3, InTech.
24. Barbieri JT and **Sun J**; Pseudomonas aeruginosa ExoS and ExoT. *Rev Physiol Biochem Pharmacol*. 2004; 152:79-92. Epub 2004 Aug 24. Review.
25. **Sun J**, Aktories K. Barbieri JT; Bacterial toxins that modify the actin cytoskeleton. *Microbial Toxins: Molecular and Cellular Biology*. Book. Horizon Scientific Press & Caister Academic Press (2005).

PREFESSIONAL PRESENTATIONS (CONFERENCES/INVITED SEMINARS)

- 10/2015: **College of Health Sciences, UTEP.** Invited Speaker. "Membrane Penetration of Mycobacterium tuberculosis ESAT-6: Key Step of TB Infection".
- 09/2015: **Department of Biological Sciences, Purdue University.** Invited Speaker. "Roles of ESAT-6 membrane interaction in pathogenesis of Mycobacterium tuberculosis"
- 08/2015: **College of Biomedicine and Bioengineering, Northeastern University, Shenyang, China.** Invited Speakers "Mycobacterium tuberculosis ESAT-6: a single molecular target for tuberculosis prevention, diagnosis and treatment"
- 07/2015: **Department of Chemistry, Beijing Normal University.** Invited Speaker. "ESAT-6, a single protein that dictates virulence of Mycobacterium tuberculosis"
- 03/2015: **Department of Chemistry and Biochemistry, New Mexico State University.** Invited Speaker. "Membrane interaction of Mycobacterium tuberculosis ESAT-6".
- 09/2014: **Department of Pathology and Laboratory Medicine, University of Texas Health Science Center at Houston.** Invited Speaker. "Mycobacterium tuberculosis ESAT-6, a multifunctional virulence factor in Mtb infection"
- 05/2014: **114th General Meeting of American Society for Microbiology.** Boston, MA. Poster presentation: "*Identification Of The Disulfide Bond In The Immunoglobulin Domain Of Anthrax Toxin Receptor 2 That Is Required For Anthrax Toxin Pore Function*"
- 03/2014: **Gordon Research Conference - Protein Transport Across Cell Membranes.** Galveston, TX. Poster Presentation: "*Disruption of the disulfide bond in the Ig domain of anthrax toxin receptor 2 induces a conformational change that blocks the channel of anthrax protective antigen pore on the membranes*"
- 02/2014: **NMSU-UTEP mini-symposium, Las Cruces, NM.** Oral communication: "*Molecular mechanism of Bacterial pathogenesis*"
- 02/2014: **TM's 3rd world Molecular and Cell Biology online Conference.** Invited Speaker and section chair, Seminar Title: "*Disruption of the disulfide bond in the Ig domain of anthrax toxin receptor 2 induces a conformational change that blocks the channel of anthrax protective antigen pore on the membranes*"
- 10/2013: **Medical College of America - Biomedical Research Symposium. El Paso, TX.** Invited Discussion Panel member of Infectious Diseases roundtable.
- 08/2013: **Guangzhou Institutes of Biomedicine and Health, Chinese Academy of Sciences. Guangzhou, China.** Invited Speaker, Seminar Title: "*Roles of ESAT-6 Membrane Interaction in Pathogenesis of Mycobacterium tuberculosis*"

- 07/2013: **BIT's 3rd Annual World Congress of Microbes-2013-3rd Annual Symposia of Bacteriology and Infection (SBI-2013). Wuhan, China.** Invited speaker, Seminar Title: "*Allosteric Regulation of Anthrax Toxin Action by Receptor Disulfide*"
- 07/2013: **Institute of Tuberculosis, Beijing, China.** Invited Speaker, Seminar Title: "*How ESAT-6 contributes to virulence of Mycobacterium tuberculosis through membrane interaction*"
- 04/2013: **TTRS (Texas TB Research Symposia). San Antonio, TX.** Invited Speaker, Seminar Title: "*Membrane Interaction of Mycobacterium tuberculosis ESAT-6*".
- 03/2013: **Tuberculosis: Understanding the Enemy. Keystone symposia, Whistler Conference Centre, Bristish Columbia, Canada.** Poster presentation: "*Differential Membrane Interaction of ESAT-6 Proteins from M. tuberculosis and M. smegmatis*"
- 02/2013: **UTEP-Bioinformatics Seminar. El Paso, TX.** Invited Speaker, Seminar Title: "*Membrane interaction of Bacterial Virulence Factors*"
- 02/2013: **TM's 2nd world Molecular and Cell Biology online Conference.** Invited Speaker, Seminar Title: "*Membrane Interaction of Mycobacterium tuberculosis ESAT-6*"
- 07/2012: **Gordon Research Conference: Microbial toxins and pathogenesis. Waterville Valley, NH.** Poster Presentation, title: "*Disulfide reduction-induced conformational changes inhibited anthrax toxin action*"
- 02/2012: **TM'S 1ST World Molecular and Cell Biology Online Conference.** Invited Speaker, Seminar Title: "*Receptor disulfide allosteric regulation of anthrax toxin action*"
- 04/2011: **1st University of Texas at El Paso Symposium on infectious diseases and health disparity in a Changing World. El Paso, TX.** Section Chair and Invited Speaker of Bacterial Infectious Diseases. Seminar Title: "*Receptor Disulfide-Mediated Allosteric Inhibition of Anthrax Toxin Pore Formation*"
- 07/2010: **Gordon Research Conference - Microbial Toxins & Pathogenicity. Waterville Valley, NH.** Poster Presentation: "*Characterization of the ectodomain of anthrax toxin receptor 2: effects of disulfide bonds on anthrax toxin action.*"
- 05/2010: **Texas Tech University Health Sciences Center Paul L. Foster School of Medicine And The University of Texas El Paso 4th Annual Research Colloquium. El Paso, TX.** Invited Speaker, Seminar Title: "*Characterization of the ectodomain of anthrax toxin receptor 2: effects of disulfide bonds on anthrax toxin action*"
- 04/2010: **Border Biomedical Research Center Advisory Committee Meeting. El Paso, TX.** Invited Speaker, Seminar Title: "*Bacterial Virulent Factors and Host-Pathogen Interaction*"

- 08/2009: **Institute of Microbiology, China Academy of Sciences, Beijing, China.** Invited Speaker, Seminar Title: *"Effects of Receptors on Anthrax Toxin Pore Formation and Membrane Translocation"*
- 05/2008: **ZheJiang University School of Medicine, HangZhou, China.** Invited Speaker, Seminar Title: *"Roles of A-B Toxins in Bacterial Pathogenesis"*
- 08/2006: **Gordon Research Conference - Membrane Transport Protein. Biddeford, ME.** Poster: *"A liposomal system to study anthrax toxin assembly and pore formation: effect of the receptor"*
- 05/2006: **Annual meeting of P01AI056013, Polyvalent inhibitor of anthrax toxin action. San Diego, CA.** Invited Speaker, Seminar Title: *"A liposomal system to study the roles of anthrax receptor in anthrax toxin assembly and pore formation"*
- 05/2003: **103rd American Society of Microbiology General Meeting. Washington DC.** Poster: *"Auto-ADPribosylation of Pseudomonas aeruginosa exoenzyme T"*
- 05/2002: **102nd American Society of Microbiology General Meeting. Salt Lake City, UT.** Poster: *"Pseudomonas aeruginosa ExoS mediates the actin reorganization through RhoGDI"*

SELECTED STUDENT ABSTRACTS

- 09/2015: **The 2nd Border Biomedical Research Center Symposium: Health Disparities: From Molecules to Disease, UTEP, El Paso, TX.**
Student poster 1 (Javier Aguilera): Absence of N-Terminal Acetylation of ESAT-6 Protein from Mycobacterium tuberculosis in Reduced Pore Formation.
Student poster 2 (Qi Zhang): Role of ESAT-6 in mycobacterial cytosolic translocation: Effects of Mutations at Glutamine 5.
Student poster 3 (Pedro Jacquez): The Disulfide bond Cys255-Cys279 in the immunoglobulin-like domain of anthrax toxin receptor 2 is required for membrane insertion of anthrax protective antigen pore
- 08/2015: **2015 UTEP-COURI Summer Symposium, UTEP, El Paso, TX**
Student poster 1 (Yutong Wang): "Effects of Detergents on ESAT-6 Oligomerization and cytotoxicity"
Student poster 2 (Haijing Wu): "Does ESAT-6 form a homo-oligomer?"
- 12/2014: **2014 National Institute on Minority Health and Health Disparities Grantees' Conference, National Harbor, Maryland.**
Student poster (Pedro Jacquez): Characterization of the disulfide bonds in ANTXR2
- 11/2014: **2014 Annual Biomedical Research Conference for Minority Students (ABRCMS). San Antonio, TX.**
Student poster (Pedro Jacquez): Characterization of the

disulfide bonds in the ectodomain of anthrax toxin receptor.
Student poster (Trini Ochoa): Characterization of Mycobacterium tuberculosis ESAT-6 homodimerization.

Student poster (Javier Aguilera): The effects of N-terminal acetylation on pore formation of Mycobacterium tuberculosis ESAT-6.

08/2014: **2014 UTEP-COURI Summer Symposium: Showcasing Emerging Researchers, Scholars and Artists. El Paso, TX.**

Student poster 1 (Salvador V. Reyes): "Expressoin and purification of Mtb ESAT-6 proteins with N- or/and C-terminal deletions"

Student poster 2 (Qianyi Wang): "Expression and purification of Mycobacterium tuberculosis ESAT-6 as a soluble protein in E. coli."

Student poster 3 (Javier Aguilera): "The effects of N-terminal Acetylation on the pore formation of Mycobacterium tuberculosis ESAT-6 protein"

Student poster 4 (Yi Huang): "Investigation of effects of the hydrophobic residues on Mycobacterium tuberculosis ESAT-6 membrane-interacting activity"

Student poster 5 (Ramon Villaverade): "Purification of the MtbESAT-6 Protein"

04/2014: **4th Annual COURI Symposium: Showcasing Emerging Researchers at the Forefront of Sciences. El Paso, TX.**

Student poster 1 (Javier Aguilera): "The effects of N-terminal Acetylation on the pore formation of Mycobacterium tuberculosis ESAT-6 protein"

Student poster 2 (Honsaker C): "Quantification of Mycobacterial Phagosomal Rupture in Macrophages with Fluorescence Energy Transfer Microscopy"

04/2014: **New England Science Symposium. Boston, MA.**

Student poster (Erick Huerta): "Mtb ESAT-6 purification for molecular fingerprinting"

02/2014: **Annual Meeting of the Rio Grande Branch of the American Society of Microbiology. El Paso, TX.**

Student oral presentation (Pedro Jacquez): "Characterization of the disulfide bonds in the ectodomain of anthrax toxin receptor"

Student poster 1 (Javier Aguilera): "Effects of the acetylation-mimic mutations of Threonine 2 on membrane interaction of Mycobacterium tuberculosis ESAT6"

Student poster 2 (Yue Ma): "Membrane interaction of Mycobacterium tuberculosis ESAT-6"

11/2013: **2013 Annual Biomedical Research Conference for Minority Students (ABRCMS), Nashville, TN.**

Student poster: "Mtb ESAT-6 purification for molecular

fingerprinting"

04/2012: **2nd Annual COURI Symposium: Showcasing Emerging Researchers at the Forefront of Sciences. El Paso, TX.**

Student poster (Sebastian Montalvo): "Purification and characterization of Mycobacterium tuberculosis ESX-1 secreted protein ESAT-6".

02/2012: **Annual Meeting of the Rio Grande Branch of the American Society of Microbiology. Las Cruces, NM.**

Student presentation (Gustavo Avila): "Cryo-Electron Microscopic Structural Studies of Anthrax Toxin Receptors"

04/2011: **1st Annual COURI Symposium: Showcasing Emerging Researchers at the Forefront of Sciences. El Paso, TX.**

Student poster (Ernesto Licon): "Expression and Purification of a Redox Sensitive Green Fluorescent Protein Fused with Anthrax Toxin Lethal Factor"

04/2011: **1st University of Texas at El Paso Symposium on infectious diseases and health disparity in a Changing World. El Paso, TX.**

Student poster (Pedro Jacquez): "Characterization of the Disulfide Bonds of Anthrax Toxin Receptor 2"

Student poster (Joaquin De Leon): "Membrane Interaction of Mycobacterium Tuberculosis ESX-1 Secreted Proteins"

09/2010: **The 2010 "End-of-the-Summer" Research Exhibition. El Paso, TX.**

BRIDGE student poster (Consuelo Gonzales): "Construction of a Redox-Sensitive Green Fluorescent Protein Fused with Anthrax Toxin Lethal Factor"

RESEARCH SUPPORT

- **Project title:** Role of ESAT-6 membrane interaction in pathogenesis of Mycobacterium tuberculosis
Grant Type: NIH/NIAID R01
Role: PI
Status: Pending
Supported Period: 09/01/2015 - 08/31/2020
Amount: \$1,250,000
- **Project title:** Development of a point-of-care device for rapid tuberculosis diagnosis: a pilot study
Grant Type: NIH-BBRC Pilot
Role: PI
Status: Pending
Supported Period: 09/01/2015 - 08/31/2020
Amount: \$2,5000
- **Project title:** Development of a rapid tuberculosis diagnosis approach with high sensitivity and specificity

Grant Type: UTEP Interdisciplinary Research Grant

Role: PI

Status: Current

Supported Period: 03/01/2015 - 03/31/2017

Amount: \$2,0000

- **Project title:** Receptor Allosteric Regulation of Anthrax Toxin Action
Grant Type: NIH/NIGMS
Role: Principle Investigator
Status: Current
Supported Period: 04/08/2011 - 03/31/2016
Amount: \$1,234,370
- **Project title:** Super Resolution Two-Photon Fluorescence Resonance Energy Transfer (FRET) Microscopy for Imaging Molecular Interactions in Bacterial and Viral Infections
Grant Type: College of Science's Multidisciplinary Research Pilot Program
Role: Co-PI
Status: Current
Supported Period: 01/21/2014 - 08/31/2014
Amount: \$20,000
- **Project title:** Roles of Post-Translational Modifications in ESAT-6-Mediated Membrane Interaction
Grant Type: NIH/BBRC-Pilot
Role: Principle Investigator
Status: depleted
Supported Period: 07/13/2012 - 06/30/2013
Amount: \$25,000
- **Project title:** Expression and Purification of a Redox-Sensitive Green Fluorescence Protein Fused with Anthrax Toxin Lethal Factor.
Grant Type: UTEP-COURI Award
Role: Mentor/PI
Status: depleted
Supported Period: 11/01/2010 - 07/31/2011
Amount: \$5,000
- **Project title:** Optimization of Protein Purification and Determination of Disulfide Linkage for the Extracellular Domain of Human Anthrax Toxin Receptor 2 Receptor Allosteric Regulation of Anthrax Toxin Action

Grant Type: UTEP-URI

Role: Principle Investigator

Status: Depleted

Supported Period: 09/01/2010 - 08/31/2011

Amount: \$5,000

- **Project title:** New Lab Startup
Grant Type: UTEP New Faculty Startup fund
Role: Principle Investigator
Status: depleted
Supported Period: 01/01/2009 - 08/31/2011
Amount: \$ 223,000

GRANT APPLICATIONS (not funded)

- **Project Title:** Development of non-cytolytic ESAT-6 mutants for novel and safe tuberculosis vaccines
Grant Type: EPIC Fund Grant
Role: PI
Time of Submission: 12/06/2014
Amount: \$50,000
- **Project Title:** Role of Mycobacterial EsxA Membrane Interaction in Transition of Latency to Active Tuberculosis
Grant Type: NHAPR
Role: PI
Time of Submission: 10/31/2013
Amount: \$100,000
- **Project title:** Acquisition of a circular dichroism spectropolarimeter with comprehensive capability with a broad range of applications
Grant Type: NSF-MRI
Role: co-PI
Time of Submission: Oct, 2012
Amount: \$200,000
- **Project title:** Engineering Anthrax Toxin For Targeted Cancer Therapy: Proof-Of-Principle Tests On Cancer Cells Expressing Interleukin-2 Receptors
Grant Type: CPRIT-High-Impact/High-Risk Research Awards
Role: PI
Proposed Period: 12/01/2012 - 11/30/2014
Amount: \$200,000

- Project title:** Understanding the Molecular Mechanisms of Vpu in HIV-1 Infection
Grant Type: BBRC Pilot
Role: PI (Co-PI: Dr. Manuel LIano)
Proposed Period: 08/01/11 - 07/31/12
Amount: \$ 25,000
- Project title:** Request a fast-scan circular dichroism spectrophotometer for biomedical research and education
Grant Type: LERR (The University of Texas System)
Role: Principle Investigator
Proposed Period: 08/01/11 -
Amount: \$ 120,000
- Project title:** Biochemical Characterization of Pore Formation Mediated by Virulence Factors from Mycobacterium tuberculosis
Grant Type: Welch Foundation Research Grant
Role: Principle Investigator
Proposed Period: 06/01/11 - 05/31/13
Amount: \$ 100,000
- Project title:** Characterization of Tetanus Toxin Pore Formation in a Liposomal System
Grant Type: American Heart Association - Beginning Grant-in-aid
Role: Principle Investigator
Proposed Period: 07/01/11 - 06/30/13
Amount: \$ 70,000
- Project title:** Roles of Macrophage Oxidative Burst in Anthrax Toxin Action
Grant Type: Midwest Regional Center of Excellence for Biodefense and Emerging Infectious Diseases Research
Role: Principle Investigator
Proposed Period: 09/01/11 - 08/31/14
Amount: \$ 668,790
- Project title:** Integrating STEM Research and Education Using Online Video Sharing and Multimedia Interaction
Grant Type: NSF - STEM education
Role: Co-PI
Proposed Period: 07/01/11 - 06/30/16
Amount: \$ 2,499,800

TEACHING EXPERIENCE

- 2009 - Assistant Professor - Microbiology; Department of Biological Sciences, UTEP
Courses taught as a primary instructor:
Undergraduate - Microorganisms and Diseases (MICR2330), General Microbiology (Lecture-MICR2340), General Microbiology (Laboratory-MICR2141), Microorganisms in Ecosystem (MICR3328), Senior Seminar (BIOL4129)
Graduate - Physiology of Bacterial Cells (BIOL5329), Seminar (BIOL5310)
Course taught as a team:
Undergraduate - Techniques in Molecular Biochemistry (CBCH4310), Advanced Topics in Molecular Biochemistry (CBCH4320), Cellular Biochemistry (CBCH3414)
Graduate - Research Funding & Professional Development (BIOL5308, BIOL6308), Structure and Function of Macromolecules (BIOL5304)
- 1998 - 1999 Graduate Teaching Assistant - Department of Biochemistry and Molecular Biology, Wesleyan University
Course: General Biology Laboratory
- 1995 - 1998 Graduate Teaching Assistant - Department of Molecular Biology and Biochemistry, China Agriculture University
Course: General Biology Laboratory

Semester	Course	Course Name	Students	Credit Hours
Spring 2015	MICR2340	General Microbiology	170	3
	MICR2141	General Microbiology Lab	220	1
	BIOL5310	Seminar	26	3
	CBCH4320	Adv Topics in Mol Biochem	48	3
Fall 2014	MICR3328	Microorganisms in Ecosystem	17	3
	MICR2141	General Microbiology Lab	240	1
	BIOL4198	Special Problems	2	1
	BIOL5310	Seminar	27	3
	BIOL6399	Dissertation	1	3
	BIOL5308	Rsrch Funding & Prof Developmt (team teaching)	8	3
	BIOL6308	Rsrch Funding & Prof Developmt (team teaching)	11	3
	CBCH4310	Techniques in Mol biochem (team teaching)	40	3
Summer 2014	MICR2340	General Microbiology	12	3
	BIOL4398	Special Problem	1	3

	BIOL6390	Independent Research	1	3
Spring 2014	MICR2340	General Microbiology	172	3
	BIOL5310	Seminar	21	1
	MICR2141	General Microbiology Lab	159	1
	BIOL4398	Special Problems	2	3
	BIOL5298	Special Problems	1	2
	CBCH4320	Adv Topics in Mol Biochem (Team teaching)	53	3
	BIOL6190	Independent Research	1	1
	BIOL5399	Thesis	1	3
	BIOL6399	Dissertation	1	3
Fall 2013	BIOL5329	Physiology of Bacterial Cells	8	3
	BIOL5310	Seminar	22	1
	MICR2141	General Microbiology Lab	174	1
	BIOL4398	Special Problems	3	3
	BIOL5308	Rsrch Funding & Prof Developmt (team teaching)	4	3
	BIOL6308	Rsrch Funding & Prof Developmt (team teaching)	5	3
	BIOL6190	Independent Research	1	1
	CBCH4310	Techniques in Mol biochem (team teaching)	43	3
	BIOL6399	Dissertation	1	3
Summer 2013	BIOL4129	Senior Seminar	23	1
	MICR2340	General Microbiology	49	3
Spring 2013	MICR2340	General Microbiology	139	3
	BIOL4298	Special Problem	1	2
	BIOL4398	Special Problem	2	3
	BIOL5302	Resrch Biological Science	1	3
	BIOL6398	Dissertation	1	3
	CBCH4320	Adv Topics in Mol Biochem (Team teaching)	48	3
	BIOL6690	Independent Research	1	6
Fall 2012	BIOL4198	Special Problems	1	1
	BIOL4398	Special Problems	3	3
	MICR3328	Microorganisms in Ecosystems	19	3
	BIOL5399	Thesis	1	3
	BIOL6490	Independent Research	1	4
	BIOL6390	Independent Research	1	3
	BIOL6690	Independent Research	1	6
	CBCH4310	Techniques in Mol Biochem (Team teaching)	17	3
Spring 2012	BIOL4198	Special Problems	2	1
	BIOL4398	Special Problems	2	3
	BIOL5502	Resrch Biological Science	1	5
	BIOL5302	Resrch Biological Science	1	3

	MICR2440	General Microbiology	117	3
	BIOL5399	Thesis	2	3
	BIOL6390	Independent Research	1	3
	BIOL5304	Struct/Funct Macromolecules	24	3
	CBCH4320	Adv Topics in Mol Biochem (Team teaching)	19	3
	CBCH3414	Cellular Biochemistry (Team teaching)	36	4
Fall 2011	BIOL4298	Special Problems	1	2
	BIOL4398	Special Problems	1	3
	BIOL5302	Resrch Biological Science	1	3
	BIOL5329	Physiology of Bacterial Cells	13	3
	BIOL5399	Thesis	1	3
	BIOL6390	Independent Research	2	3
	BIOL6690	Independent Research	1	6
	CBCH4310	Techniques in Mol Biochem (Team teaching)	12	3
Summer 2011	BIOL4129	Senior Seminar	25	1
	BIOL5302	Resrch Biological Science	1	3
	BIOL5399	Thesis	1	3
Spring 2011	BIOL4198	Special Problems	1	3
	BIOL5302	Resrch Biological Science	1	3
	BIOL5398	Thesis	1	3
	BIOL6590	Independent Research	1	5
	BIOL6690	Independent Research	1	6
	MICR2440	General Microbiology	120	4
Fall 2010	BIOL4398	Special Problems	2	3
	BIOL5302	Resrch Biological Science	2	3
	BIOL5340	Structure/Function of Macromolecules (I taught two lectures)	26	3
	BIOL6390	Independent Research	1	3
	MICR3328	Microorganisms in Ecosystems	19	3
Summer 2010	BIOL4129	Senior Seminar	16	1
	BIOL4398	Special Problems	4	3
Spring 2010	BIOL4198	Special Problems	1	1
	BIOL4398	Special Problems	1	3
	BIOL5399	Thesis	1	3
	BIOL6390	Independent Research	1	3
	MICR2330	Microorganisms and Diseases	76	3
Fall 2009	BIOL4398	Special Problems	2	3
	BIOL5302	Resrch Biological Science	2	3
	BIOL5329	Physiology of Bacterial Cells	19	3

	BIOL6390	Independent Research	1	3
Summer 2009	BIOL6390	Independent Research	1	3
Spring 2009	MICR2330	Microorganisms and Diseases	78	3

	<u># of students</u>	<u>Credit Hrs</u>
Total:	2383	261

CURRICULUM DEVELOPMENT (scheduled teaching)

MICR 2330 - Microorganisms and Disease: This course is designed for the students with non-biology major, in particularly the students from nursing program of UTEP. This course focuses on the basic concepts of medical microbiology, especially in the areas of bacterial, viral and fungal infectious diseases, antibiotics, vaccines, host-pathogen interaction.

MICR 2440 (Now 2340) - General Microbiology: This course is required for the students in microbiology major in the Department of Biological Sciences. The goal of this course is to induce the important, 100-years-old science to students so that students have a nearly comprehensive picture of microbiology, ranging from basic understandings of microbial organisms to many branches of microbiology applications, such as in medicine, food, industry, agriculture, and environment. This course covers many disciplines, such as bacterial genetics, biochemistry, cell biology, virology, bacteriology, parasitology, immunology, and clinical infectious diseases. This course has a large number of enrollments. I have fully taken advantage of Blackboard system, in which I make announcements, upload the syllabus, teaching materials, and on-line tests. To further improve effectiveness of teaching in the large class, I joined a CETaL Workshop "Wisdom Wednesday", in which I discussed with a few senior teaching faculty about how to effectively teach a large class, and I have learned a few important tricks, such as "ABCD card", wireless microphone (to walk around in the classroom), pre-class quizzes on blackboard, walk-in quizzes, etc. I am also considering use web-based student response system, such as SWATT, to the classroom. A sample syllabus for this course is attached.

MICR 2141 - General Microbiology Laboratory: This is the laboratory course that complements the MICR 2340 General Microbiology Lecture course. The objectives of MICR2141 mirror the scientific processes

taught in MICR2340, improve scientific communications, including writing and graphing skills, and hands on experience with key microbiology laboratory techniques, such as microscopy, dilution, culture, gram stain, and PCR. As an instructor of this course, I oversee and ensure the teaching quality of the whole class, including coordinating and monitoring TAs' teaching activities in the laboratories, managing on-line quizzes and tests, answering students' questions, and grading.

MICR 3328 - Microorganisms in Ecosystems: This course is designed for undergraduate students to study the interaction of microorganisms with ecosystems and how this interaction affects both microorganisms and ecosystems in a macroscopic level. Due to a relatively small number of enrollments, I was able to increase teacher-student interaction. In addition to present the lectures to the class, I assigned the students into a few study groups and had each group to present a chapter. The students' presentations were evaluated by the teacher and other students using an established rubric (See attached evaluation rubric). The students' grades are based on several in-class exams and the evaluation of their presentations.

BIOL 4129 - Senior Seminar: This course is designed for senior undergraduate students to help them make career choices before graduation. This course provides information and insights of many potential career choices (graduate school, medical school, public health, etc.) for students and also provides career development workshop to help students in job searching. I normally offer this course in summer with an enrollment between 10 to 25 students. Since it is a relatively small size class, I have designed it as a student-centered, combination of lectures and workshops, with intensive student-instructor interactions. I invited a number of scientists, educators, and professionals from inside or outside of UTEP campus into the classroom (Please refer to the sample syllabus with a speakers' schedule). These invited guest speakers presented and talked to the students with the topics that are the most relevant to their future career choices. The UTEP career center was also invited to organize workshops to help students in resume writing and interview skills, etc.

BIOL 5329 - Physiology of Bacterial Cells: is a graduate level course for both PhD and Master students. The goal of this course is to provide a broad and in depth understanding of bacterial physiology with a focus on molecular and cellular mechanisms. Students will not only learn the basic concepts of bacterial physiology in the assigned textbook, but also obtain new and updated knowledge in current research articles. For graduate students, instead of testing students on memorizing "information", I emphasize more on training students to acquire the ability to transform the knowledge in textbook to the "real world"

scientific research, which includes, but is not limited to, asking critical questions, designing well-controlled, feasible experiments, analyzing data, and trouble shooting, etc. The best way to improve this ability in classroom is to combine the knowledge in textbook with the scientific studies reported in research articles. In the class, the instructor provides overviews of the textbook, gives lectures on basic concepts of bacterial physiology, and presents research articles on the most current research progress in the field. Students actively participate the learning through literature search, oral presentations and in-class discussion on the most recent research articles that are related to the topics covered in the course. Student grades are based on class participation, oral presentation, and a summary report at the end of the semester (please see attached sample syllabus).

BIOL 5310 - Seminar: The Department of Biological Sciences and Border Biomedical Research Center (BBRC) support a series of weekly seminars in both spring and fall semesters. Seminars are presented by well-known investigators in the world invited by the BBRC faculty and cover a wide spectrum of biomedical research topics. The seminar series significantly enhance scientific communications and collaborations between the BBRC faculty and researchers inside and outside UTEP. Students in the department also benefit from participating seminars and interacting with top scientists around the world. As an organizer and an instructor of this course, I organize the seminar series, including arranging seminar schedules, identifying and inviting speakers. I am also monitoring students' attendance in the class.

RESEARCH MENTORING

Postdoctoral Fellows/Research Staffs

01/2015 - present: Pedro Jacquez, PhD. "Structure and function of Anthrax toxin receptor structure and function"
09/2012 - Present: Qi Zhang, PhD. "Structural and Functional Characterization of ESAT-6 and CFP-10 from M. Tuberculosis"
06/2013 - 09/2013: Yurong Chai, PhD. "2D SDS-PAGE analysis of ESAT-6"
01/2013 - 07/2013: Wei Liu, PhD. "Membrane interaction of Mycobacterium tuberculosis"
11/2011 - 03/2013: Guozhong Jiang, PhD. "Structural and Functional Characterization of Anthrax Toxin Receptor"
01/2010 - 12/2010: Rebecca Zhao, MS. "Effects of Chemical Additives on Expression of Anthrax Toxin Receptor"

Thesis and Doctoral Dissertation Directed

08/2014 - Present: Trini Ochoa, (MARC student thesis)
 01/2009 - Pedro Jacquez (PhD dissertation planned in Fall 2014)
 "Characterization of the disulfide bonds in the Ig domain of anthrax toxin receptor 2"
 08/2012 - 05/2014: Christina (Yue) Ma (Completed MS in Biological Sciences), "Membrane Interaction of Mycobacterium tuberculosis ESAT-6"
 09/2011 - 05/2013: Kyle W. Boone (Completed MS in Bioinformatics), "3-D EM Reconstruction of Anthrax Toxin and Receptor complex"
 01/2009 - 08/2012: Joaquin De Leon III (Completed MS in Biological Sciences), "Roles of ESX-1 Secreted Proteins in Pathogenesis of Mycobacterium tuberculosis"
 06/2010 - 12/2012: Naima Alshrif (Completed MS in Biological Sciences), "Roles of Protein Disulfide Isomerase in Regulation of Anthrax Toxin Receptor"

Other Graduate Student Research Mentoring

05/2011 - Present: Gustavo Avila (Chemistry), "3-D Reconstruction of Anthrax Toxin-Receptor Complex by Cryo-electron Microscopy" (Co-mentor with Dr. Chuan Xiao, Chemistry)
 01/2014 - 05/2014: Jitian Li (Rotation student of Biological Sciences), "Homodimerization of Mycobacterium tuberculosis ESAT-6"
 01/2012 - 05/2012: Yang Li (Rotation student of Biological Sciences), "Site-directed mutagenesis of Mycobacterium tuberculosis ESAT-6"
 01/2011 - 05/2011: Ningjing Lei (Rotation Student of Biological Sciences), "Expression and Purification of Anthrax Toxin Receptor with a Trigger Factor"
 09/2010 - 08/2011: Angelica Lopez (MS in Biological Sciences), trained to perform various molecular biology techniques and projects.
 08/2009 - 12/2009: Vincent Gant (Rotation Student of Biological Sciences), "Developing a Yeast Expression System"

Service on Other Graduate Student Committees

2014 - Present: Chenoa Arico, PhD student in Biological Sciences
 2014 - Present: Joaquin De Leon, PhD student in Biological Sciences
 2012 - Present: Johnathan Abou-Fadel, PhD student in Biological Sciences
 2011 - Present: Yang Li, PhD student in Biological Sciences
 2010 - Present: Ningjing Lei, PhD student in Biological Sciences
 2010 - Present: Vincent Gant, PhD student in Biological Sciences

Undergraduate Students Directed in Lab Research

06/2015 - present: Ilse Martinez (RISE)
06/2015 - present: Miguel Alagra (RISE)
06/2015 - present: Andrea Loya (RISE)
05/2015 - Present: Cynthia Lugo
08/2014 - Present: Stephanie Picardo (RISE program)
06/2014 - Present: Trini Ochoa (MARC program)
09/2013 - Present: Javier Aguilera (COURI program; Special Problems)
06/2014 - Present: Barbara Castellanos (A-PRIME TIME program)
07/2014 - 09/2014: Verena Keil (DAAD RISE)
06/2014 - 09/2014: Roland Sauter (DAAD RISE)
05/2014 - 08/2014: Ramon Enrique Villaverde (SURME program)
05/2014 - 08/2014: Salvador Vazquez Reyes (USMexSURP program)
05/2014 - 08/2014: Qianyi Wang (SURME program)
05/2014 - 08/2014: Yi Huang (SURME program)
06/2013 - 06/2014: Erick Huerta (EPCC RISE)
08/2013 - 10/2013: Jens Puschhof and Andreas Bietz (DAAD RISE summer interns from Germany)
08/2013 - 12/2013: Anapaula Themann (Special Problems)
06/2013 - 12/2013: Jennifer Betancourt (Supported by Provost Summer Research Program; Special Problems)
01/2013 - Present: Jesus Benitez (Special Problems; lab volunteer)
01/2013 - 05/2013: Erika Aguirre (Special Problems)
01/2013 - 05/2013: Michelle Valdiviez (Special Problems)
09/2012 - 10/2012: David Weigt and Hannah Flecuenstein (DAAD RISE summer interns from Germany)
06/2012 - 08/2012: Sebastian Montalvo (EPCC, Bridge Program)
08/2011 - Present: Agamyrat Altiyev (Bioinformatics, UPBiT program)
08/2009 - Present: Ernesto Licon (RISE/Special problem/volunteer)
09/2011 - 11/2011: Oliver Servin (Special Problems)
06/2011 - 08/2011: Raul (Fernie) Marin (EPCC, Bridge program)
07/2011 - 09/2011: Jacqueline Meraz (volunteer)
01/2011 - 05/2011: Roman Rodarte (Special Problems)
02/2011 - 05/2011: Diana K. Rodriguez (volunteer)
08/2010 - 11/2010: Rachel C. Stewart (Honor program)
 Danielle Aragon (honor program)
 Ashley Collazo (volunteer)
 Lilia Barragan (Special Problems)
 Diana Gomez (Special Problems)
08/2010 - 03/2011: Laura Porras (MARC)
06/2010 - 08/2011: Sofia Monarrez (EPCC, BRIDGE)
 Allyssa Amaya (LSAMP)
 Consuelo Gonzales (EPCC, RISE)

Irma Almanza (Special Problems)
Sylvia Correa (Special Problems)
Desiree Martinez (Special Problems)
Rachel Stewart (Special Problems)
01/2010 - 05/2010: Jacqueline Flynn (Special Problems)
08/2009 - 11/2009: Hector Marquez (Special Problems)
05/2010: David Michael Barry (Biology), committee
member of MARC student thesis defense:
"Development of Biochemical Methods for the
Identification of LEDGF/p75 Binding Proteins
and Post-Translational Modifications".

SERVICE

I. Institutional Service

SERVICE in COMMITTEES

08/2013 - Present: Chair of the Seminar Series of Border
Biomedical Research Center, UTEP
08/2013 - Present: Faculty Senate Committee - Undergraduate
Scholarship Committee
08/2013 - Present: Award Committee of College of Science
09/2010 - Present: Award Committee of Department of Biological
Sciences
09/2012 - 05/2013: UTEP Faculty Student Mentoring Program
09/2010 - 08/2013: Faculty Senate Committee - Museum Committee
07/2010 - 04/2011: Member of Organization Committee of "1st
University of Texas at El Paso Symposium on
infectious diseases and health disparity in a
Changing World" (April 3-5, 2011)

DISSERTATION COMMITTEES OF GRADUATE STUDENTS (NOT PI'S LAB)

2014 - Present: Chenoa Arico, PhD student in Biological Sciences
2014 - Present: Joaquin De Leon, PhD student in Biological Sciences
2012 - Present: Johnathan Abou-Fadel, PhD student in Biological
Sciences
2011 - Present: Yang Li, PhD student in Biological Sciences
2010 - Present: Ningjing Lei, PhD student in Biological Sciences
2010 - Present: Vincent Gant, PhD student in Biological Sciences
05/2011 - 07/2014: Gustavo Avila, PhD Student in Department of
Chemistry

OTHER INSTITUTIONAL SERVICE ACTIVITIES

08/2014 Poster Judge for 2014 UTEP-COURI Summer Symposium:
Showcasing Emerging Researchers, Scholars and

	Artists. El Paso, TX.
05/2014	UTEP commencement
05/2014	CoS Pre-commencement
04/2014	Poster Judge for 4th Annual COURI Symposium: Showcasing Emerging Researchers at the Forefront of Sciences. El Paso, TX.
02/2014	Poster Judge for Annual Meeting of the Rio Grande Branch of the American Society of Microbiology. El Paso, TX.
12/2013	Attended UTEP-commencement
12/2013	Attended CoS pre-Commencement
05/2013	Attended UTEP-commencement
05/2013	Attended CoS pre-commencement
09/2012	Judge for 2012 Graduate Research Expo
09/2012	Poster Judge for 2012 LSAMP Student Research Conference
03/2012	BBRC Core facility tour for BBRC external advisory committee (Dr. Susan Weintraub)
03/2012	Centennial Lecture by Alan Leshner
02/2012	Held Social event for faculty candidate interview for infectious diseases division
12/2011	Attended the testimonials for making the "Biology Video", which is used for engaged donors for UTEP and the Department.
12/2011	Attended the pre-commencement of College of Science
10/2011	Attended the RISE site visit meeting
09/2011	Attended the Student-Mentor social dinner held by the Graduate School of UTEP
09/2011	Attended the reception for the opening of New Exhibition "In His Own Words: The Life and Work of César Chávez" held by the Centennial Museum and Chihuahuan Desert Gardens
08/2011	Attended the reception for the exhibition "A River Interrupted: Making the Case for Changing Our Management of the Rio Grande" held in the Centennial Museum and Chihuahuan Desert Gardens
05/2011	Attended College of Sciences Pre-Commencement and the University Commencement
05/2011	Attended the meeting for 2011 MicroSACS report
03/2011	Abstract Reviewer, 1 st Annual COURI Symposium, UTEP College of Sciences
02/2011	3 rd annual faculty/staff shootout
12/2010	Attended Pre-commencement and Commencement of

	UTEP
05/2010	Attended the Pre-commencement of College of Science and the University commencement
04/2010	Attended the BBRC External Advisory Committee meeting
04/2010	Attended UTEP TOP-10 Seniors Reception - 60 th SGA Awards Banquet
02/2010	2 nd annual faculty/staff shootout
03/2009	1 st annual faculty/staff shootout

II. Professional Services

03/2015	Ad hoc reviewer for <i>Biochemical Journal</i>
08/2014	Ad hoc reviewer for <i>Biochemistry (ACS)</i>
02/2014	Section Chair of Structure and Function of Receptor, TM's 3rd world Molecular and Cell Biology online Conference.
01/2014	Ad hoc reviewer for <i>Biochemistry (ACS)</i>
10/2013	Member of discussion panel for Infectious Diseases Roundtable at Medical College of America - Biomedical Research Symposium. El Paso, TX.
06/2013	Ad hoc reviewer for <i>Cell Biochemistry and Biophysics</i> (Springer Journals)
04/2011	Section Chair of Bacterial infectious Diseases, at 1 st University of Texas at El Paso Symposium on infectious diseases and health disparity in a Changing World. El Paso, TX.
03/2011	Ad hoc reviewer for <i>PLoS ONE</i> journal
06/2010 - Present	Editorial Board Member of Journal of Bacteriology and Parasitology

PROFESSIONAL DEVELOPMENT

09/26/2014	Attend the grant writing workshop held by UTEP Provost Junius Gonzales.
11/2013 - present	Attend Biweekly Grant Pre-review program/workshop
04/09/2014	Attended CETaL Workshop "Wisdom Wendensday".
Sep-Dec, 2013	Series of Three T&P workshop by Provost Office
09/2013	FBI Biosecurity Workshop
04/13/2013	NIH-NSF Proposal Writing workshop
02/2013	XSEDE Regional Workshop at UTEP
08-10/11, 2011	Attended the training on Fluorescence Steady-state and life-time measurement held by ISS
10/2011	UTEP faculty workshop -Tenure and Promotion Dossier Development on Digital Measure, held by CETaL and Provost Office

09/2010 - 06/2011	UTEP-AWARE Program
05/2011	Attended the training on Faculty Webpage design, held by Faculty Instructional Technology Lab
05/2010	Grant Writing Workshop: Write Winning Grants Training Seminar held by FASEB MARC program
02/2010	Attended the conference "A day of NIH at UTEP"
12/2009	Workshop, Proposal Writing Session - Project Management, Evaluation, and Assessment, held by CETaL and ORSP
09/2009	Workshop, Proposal Writing Session - Introduction to Proposal Writing, held by CETaL and ORSP

III. Service To Community

04/2014	Judge, for ACSI (Association of Christian Schools International, El Paso) Science Fair
04/2014	Judge, for ACSI (Association of Christian Schools International, El Paso) Science Fair
05/2013	Participated "Father's Career Day" in Mary N. Tippin Elementary School. El Paso, TX
04/2013	Judge for ACSI (Association of Christian Schools International, El Paso) Science Fair
04/2012	Judge, for ACSI (Association of Christian Schools International, El Paso) Science Fair
04/2011	Judge, for ACSI (Association of Christian Schools International, El Paso) Science Fair
04/2010	Judge, for ACSI (Association of Christian Schools International, El Paso) Science Fair