

Todd P. Primm, Ph.D.  
Associate Professor & Chair  
Department of Biological Sciences  
College of Arts and Sciences

### Degrees Earned

B.S. in Biochemistry, Texas A&M University, 1992

Ph.D. in Biochemistry, Baylor College of Medicine, 1997

Distinguished Alumnus of 2010 from the Baylor College of Medicine Graduate School of Biomedical Sciences.

Intramural Training Research Award Post-Doctoral Fellow, National Institute of Allergy and Infectious Disease, National Institutes of Health, 1997-2000

### Peer-Review Publications

#### Articles

Evans, S., Pearce, A., Ibezim, P., Primm, T. P., and Gaillard, A. "Select Acetophenones Modulate Flagellar Motility in *Chlamydomonas*" **in press**. *Chemical Biology and Drug Design*.

Primm, T. P., and Franzblau, S. G. "Recent Advances in Methodologies for the Discovery of Antimycobacterial Drugs" (2007) *Current Bioactive Compounds*. 3(3), 201-208.

Montoya J., Varela-Ramirez A., Shanmugasundram M., Martinez L.E., Primm, T.P., and Aguilera R.J. "Tandem Screening of Toxic Compounds on GFP-labeled Bacteria and Cancer Cells in Microtiter Plates" (2005) *Biochemical and Biophysical Research Communications*. 335(2), 367-372.

Bland, C. S., Ireland, J., Lozano, E., Alvarez, M. E., and Primm, T. P. "Mycobacterial Ecology in the Rio Grande" (2005) *Applied & Environmental Microbiology*. 71(10).

Rajabi, L., Courreges, C., Montoya, J., Aguilera, R.J., and Primm, T. P. "Acetophenones with Selective Antimycobacterial Activity" (2005) *Letters in Applied Microbiology*. 40(3), 212-217.

Archuleta, R. J., Hoppes, Y. P., and Primm, T. P. "Mycobacteria Enter a State of Metabolic Dormancy in Response to Starvation" (2005) *Tuberculosis*. 85(3), 147-158.

Tran, T., Saheba, E., Arcerio, A., Chavez, V., Martinez, L. E., and Primm, T. P. "Quinones as Antimycobacterial Agents" (2004) *Bioorganic & Medicinal Chemistry*. 12(18), 4809-4813.

Primm, T. P., Lucero, C. A., and Falkinham, J. O. "Health Impacts of the Environmental Mycobacteria" (2004) *Clinical Microbiology Reviews*. 17, 98-106.

Archuleta, R. J., Mullens, P., and Primm, T. P. "The Relationship of Temperature to Desiccation and Starvation Tolerance of *Mycobacterium avium*" (2002) *Archives of Microbiology*. **178**, 311-314.

Primm, T. P., and Gilbert, H. F. "Hormone Binding by Protein Disulfide Isomerase, a High Capacity Hormone Reservoir of the Endoplasmic Reticulum" (2001) *Journal of Biological Chemistry* **276**, 281-286.

Primm, T. P., Anderson, S., Mizrahi, V., Avarbock, D., Rubin, H., and Barry, C. E. III. "The Stringent Response of *Mycobacterium tuberculosis* is Required for Long-Term Survival" (2000) *Journal of Bacteriology* **182**, 4889-4898.

Puig, A., Primm, T. P., Surendran, R., Lee, J. C., Ballard, K. D., Orkiszewski, R. S., Makarov, V., and Gilbert, H. F. "A 21-kDa C-terminal Fragment of Protein Disulfide Isomerase has Isomerase, Chaperone, and Anti-Chaperone Activities" (1997) *Journal of Biological Chemistry* **272**, 32988-32994.

Primm, T. P., Walker, K. W., and Gilbert, H. F. "Facilitated Protein Aggregation: Effects of Calcium on the Chaperone and Anti-Chaperone Activity of Protein Disulfide Isomerase" (1996) *Journal of Biological Chemistry* **271**, 33664-33669.

Chang, Z., Primm, T. P., Jakana, J., Lee, I. H., Serysheva, I., Chiu, W., Gilbert, H. F., and Quijcho, F. A. "*Mycobacterium tuberculosis* 16-kDa Antigen (Hsp16.3) Functions as an Oligomeric Structure *in vitro* to Suppress Thermal Aggregation" (1996) *Journal of Biological Chemistry* **271**, 7218-7223.

### **Chapters**

Book chapter. Primm, T. P., and Falkinham, J. O. "Infectious Disease: Environmental Mycobacteria" (2007) In seven volume *Encyclopedia of Public Health*, with Kristian Heggenhougen, Harvard Medical School, as Chief Editor.

### **Other**

Thesis: Primm, T. P. (1997). "Protein Disulfide Isomerase as a Chaperone: Hydrophobic Binding Sites and Its Role in Protein Folding and Aggregation." Department of Biochemistry (Baylor College of Medicine, Houston): 140.

### **Funded External Grants**

Research and training awards received total over 4.2 million dollars.

1. R15 Academic Research Enhancement Award

National Institute of Allergy and Infectious Diseases/NIH

08/07/06 – 08/07/09 \$191,498

"*Mycobacterium avium*-phagocyte interactions in a murine infection model"

2. Department of Defense, Army Engineering Research and Development Center  
Phase I 09/07 – 02/09 \$1,827,256 Phase II 03/09 – 09/10 \$1,081,590  
“Development and optimization of a novel portable biological wastewater treatment system for emergency relief and decentralized deployments”  
This project is awarded to SHSU, Lamar, and Sul Ross State Universities, through TRIES, the Texas Research Institute for Environmental Studies.

1. Faculty Research Grant  
Faculty Research Council, Sam Houston State University  
06/01/06 – 07/15/06 \$4,980

2. Genomics Education Grant  
Beckman Coulter, Inc.  
Serving as Co-I, PI is Christopher Randall.  
No funding period listed, funds for capitol equipment. \$102,000

3. UTEP Tobacco Settlement Fund  
04/01/04 – 10/31/04 \$19,000  
“The Role of Nicotinic Acetylcholine Receptors in Antigen Presentation”  
Co-investigators: Dr. Rafael Cabeza, Dr. Kristine Garza, and Dr. Fernando Gonzalez (all UTEP)

4. K22 Research Scholar Development Award  
National Institute of Allergy and Infectious Diseases/National Institutes of Health  
07/01/01 – 06/30/03, now 06/04 with 1 yr no-cost extension \$261,354  
“The Mycobacterial Stringent Response”  
An incentive prize of \$1,000 was awarded to me from UTEP in recognition of this grant.

5. William Staley Student Research Grant  
10/23/03 – 09/30/04 \$4,500  
“The Role of Opaque/Transparent Morphotype Switching in the Virulence of *Mycobacterium avium*”  
Awarded to my undergraduate microbiology student, Christopher Bland, to fund his research project and senior thesis, and as an academic scholarship.

6. Center for Border Health Research Project  
Paso del Norte Health Foundation  
10/01/01 – 3/31/04 \$75,000  
“Stationary Phase Survival Genes: Key to Latency in *Mycobacterium tuberculosis*”

7. Bridges to the Baccalaureate undergraduate research training program  
NIGMS/National Institutes of Health  
05/01/05 – 04/30/08 \$634,945

**8. Border Health Research Pilot Program/The University of Texas at El Paso**

01/10/01 – 08/31/01 \$16,000

“Extrachromosomal Elements Play a Significant Role in the Environmental Survival and Virulence of *Mycobacterium avium*”

**9. Education Award/Center for Effective Teaching and Learning**

The University of Texas at El Paso

06/01/01 – 05/31/02 \$4,000

“A Student Seminar Series and Career Information Center to Serve the Department of Biological Sciences”

**10. BWF Visiting Professorship in the Microbiological Sciences**

The Burroughs Wellcome Fund and the American Society for Microbiology

February, 2002 \$5,000

This grant provided Dr. Joe Falkinham (Virginia Tech) a five day visit to UTEP to discuss his research with faculty, present a public seminar for education, and discuss technology transfer issues with staff and faculty.

**11. Health Oriented Project**

Paso del Norte Health Foundation/administered by the UTEP College of Health Sciences

02/01/03 – 10/31/03 \$3,535

Awarded to my M.S. student (shared with Dr. Kristine Garza), Claudia Briseño to partially fund her thesis work, “Dendritic Cells in the Induction of T Cell Responses Against *Mycobacterium avium*.”

**12. Research Grant**

Lizanell and Colbert Coldwell Foundation

10/01/04 – 09/30/05 \$25,000

“Development of Quinones as Antimycobacterial Agents”

**Professional Experiences**

6/03 – 12/05 Adjunct Professor in the Discipline of Biological Science, The University of Texas Health Science Center at Houston, School of Public Health

7/00 – 8/05 Assistant Professor of Pathogenic Microbiology, Department of Biological Sciences, The University of Texas at El Paso

Appointed to the Infectious Disease and Immunology Unit of the Border Biomedical Research Center in 2001. Fellow of the Center for Effective Teaching and Learning. Director of the NIH-funded Border Bridges to the Baccalaureate Program, which brings El Paso Community College students to UTEP for a summer research experience, with the purpose of increasing the number of underrepresented minorities in the biomedical sciences.

Served a three-year term (2007-2009) on the review panel for the Ecology of Infectious Diseases Program, jointly funded by the National Science Foundation and National Institutes of Health.

Served as Ad Hoc grant reviewer on the standing Microbiology and Infectious Diseases Review Committee for the National Institute of Allergy and Infectious Diseases – NIH, in Feb, 2004.

Member of the American Society for Microbiology, and President-Elect of the Texas Branch. Session Chair and invited speaker at the 2002 Texas Branch Meeting of ASM and invited speaker at the 2001 and 2006 Branch Meetings. Meeting Chair for the 2007 Branch Meeting, held at SHSU for the first time ever. Co-convenor and speaker of Division U (Mycobacteriology) Symposium U-105, at the national ASM 104<sup>th</sup> General Meeting in New Orleans, May 23-27, 2004. Six students and one post-doctoral fellow also presented posters at the meeting, two receiving \$500 travel awards. Invited speaker at the 2003 & 2004 Rio Grande Branch ASM meetings, and served as Chair of the Planning Committee for the 2002 Branch Meeting.

Invited speaker and session chair at the Inaugural Sun Conference on Teaching and Learning at UTEP (03/02), presenting data on a professional skills development program for graduate students in Biology. Invited speaker at the 2<sup>nd</sup> Sun Conference (03/03), presenting on instant feedback and assessment during teaching. Chair of 3 sessions at the 3<sup>rd</sup> Sun Conference (03/04). Reviewer of session proposals for the 4<sup>th</sup> Sun Conference (03/05).

Invited reviewer of two textbook chapters in 3<sup>rd</sup> Ed. Recombinant DNA, published by W.H. Freeman and Company, 2005. Invited reviewer of entire textbook, Microbiology, by Bauman, published by Benjamin Cummings, in preparation for a 2<sup>nd</sup> Edition, 2006. Invited reviewer of two chapters in new Cell Biology text, J. Wiley & Sons, Inc., authors are Helen Kreuzer and Gerald Karp, 2007. Invited reviewer of four textbook chapters in Prescott, Harley, and Klein's Microbiology, 7<sup>th</sup> Edition, published by McGraw Hill, in preparation for 8<sup>th</sup> Edition, 2008. Invited reviewer of four textbook chapters in 5<sup>th</sup> Ed. Molecular Biology of the Gene, Watson, et al. 2003, published by Benjamin Cummings.