

EDITH M. OSBORNE, Ph.D.
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Angelo State University
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EDUCATION

Ph.D./Biochemistry

Texas A&M University, College Station, TX, December 2005

Thesis: Investigation of Metal Binding to the Hammerhead Ribozyme Utilizing Various Spectroscopic Techniques (Professor V. J. DeRose)

B.S./Chemistry (*summa cum laude*, American Chemical Society Certification)

Southwestern Oklahoma State University, Weatherford, Oklahoma, 2000

EXPERIENCE

- Fall 2019 **Angelo State University**, San Angelo, TX
Professor of Chemistry. Courses taught: Biochemistry, general chemistry, and chemistry seminar.
- Fall 2014 **Angelo State University**, San Angelo, TX
Associate Professor of Chemistry. Courses taught: Biochemistry, general chemistry, chemical literature, and chemistry seminar.
- Fall 2008 **Angelo State University**, San Angelo, TX
Assistant Professor of Chemistry. Courses taught: Biochemistry, general chemistry, chemical literature, chemistry seminar, and instrumental analysis.
- Fall 2007 **Salem State College**, Salem, MA
Lecturer. Course instructor for CHE 124 General Chemistry for the Life Sciences.
- 2006-2008 **New England Biolabs**, Ipswich, MA
Postdoctoral Fellow. Investigation of translational recoding systems using combinatorial genetic approaches.
- 2006-2007 **Gordon College**, Wenham, MA
Guest Lecturer. Presented lectures on my current research and on course material to a variety of undergraduate biology classes.
- 2000-2005 **Department of Biochemistry, Texas A&M University**, College Station, TX
Research Assistant. Observation of direct metal-RNA coordination using NMR. Utilization of EPR spectroscopy to determine metal affinities to RNA. Analysis of RNA folding using UV-Vis thermal denaturation and native gel electrophoresis. Performed kinetic studies to examine the catalytic enhancement of metal ions in ribozymes, RNA Enzymes.
Teaching Assistant. Instructor for recitation sessions for undergraduate general biochemistry. Included presentation of a review lecture and preparation of problem sets.
- Summer 2000 **Hach**, Loveland, CO
Chemist Intern. Development and reliability testing of water quality analyzers.
- 1999-2000 **Department of Chemistry, Southwestern Oklahoma State University**, Weatherford, OK
Instrument Room and Lab Assistant. Preparing reagents, assisting students, instrument set-up and operation.
- Summer 1999 **Celanese Technical Center**, Corpus Christi, TX.
Chemist Intern. Worked with a research team to successfully recover usable products from a waste stream.

Summer 1998 **Celanese**, Pampa, TX
Chemist Intern. Updated simplified process flowsheets, performed color analysis studies, assisted in GC method development.

AFFILIATIONS

American Chemical Society (since 2000)
Phi Lambda Upsilon Chemistry Honor Society (2003 local chapter vice-president)
Texas A&M University Graduate Teaching Academy Fellow

HONORS AND AWARDS

Fall 2018 ASU Faculty Mentored Undergraduate Faculty-Mentored Academic Grant:
"Identification of Affibody Molecules that Target *Agkistrodon piscivorus* Venom and their Targets" by Sarah Champagne under the direction of Dr. Edith M. Osborne
Spring 2018 ASU Faculty Mentored Undergraduate Faculty-Mentored Academic Grant:
"Identification of Protein Targets of Affibody Molecules that Target Crotalid Snake Venoms" by Clancy Collom and Jung Ah Kim under the direction of Dr. Edith M. Osborne
2016 Undergraduate Faculty-Mentored Academic Grant: "Development and Identification of Affibody Molecules that Target Crotalid Snake Venoms" by Maddison Sudduth and Amber Sullivan under the direction of Dr. Edith M. Osborne
2016-2018 Angelo State University Community-Engaged Faculty Fellow
Angelo State University Faculty Research Enhancement Program Grant, 2013
2013 Angelo State University Faculty Excellence in Leadership/Service Award
Angelo State University Faculty Research Enhancement Program Grant, 2012
2010 Research Corporation for Science Advancement (RCSA) Single-Investigator Cottrell College Science Award (research grant), \$35,000
Angelo State University Faculty Research Enhancement Program Grant, 2010
Angelo State University Faculty Research Enhancement Program Grant, 2009
ACS Permian Basin Section's Leadership Stimulation Travel Grant, 2008
NIH Chemistry/Biology Interface Training Grant Recipient, 2000-2005
Texas A&M Women in Science and Engineering Committee, 2003-2005.
Travel Grant, Biochemistry Graduate Association, Texas A&M University, Spring 2004.
NIH Chemistry Biology Interface Training Grant Steering Committee, Texas A&M University, 2003-2005.
Student Research Week Outstanding Oral Presentation in Biological Sciences, Texas A&M University, 2003.
Third Place Biochemistry Research Competition, Texas A&M University, 2003.
Graduate Student Council, Department of Biochemistry, Texas A&M University, 2001-2003.

PUBLICATIONS

"Characterization of a Native Hammerhead Ribozyme Derived from Schistosomes." E. M. Osborne, J. E. Schaak, and V. J. DeRose. 2005 *RNA* 11:187-196.

"Translational Recoding." E. M. Osborne and Christopher J. Noren. 2008 *Wiley Encyclopedia of Chemical Biology*. Ed. Tadhg P. Begley. New York: John Wiley & Sons, Inc.

"The identity of the nucleophile substitution may influence metal interactions with the cleavage site of the minimal hammerhead ribozyme." E. M. Osborne, W. L. Ward, M. Z. Ruehle, and V. J. DeRose. 2009 *Biochemistry* 48:44:10654-10664.

"Expanding the Genetic Code of *Escherichia coli* with Phosphoserine. H-S Park, M. J. Hohn, T. Umehara, L-T Guo, E. M. Osborne, J. Benner, C. J. Noren, J. Rinehart, and D. Söll. 2011 *Science* 333: 1151-1154.

SELECTED PRESENTATIONS

Texas Academy of Science 126th Annual Meeting, March 3-4, 2023, San Angelo, Texas,
"Identification and Characterization of Affibody Molecules that Target Crotalid Snake Venoms."

National American Chemical Society Meeting, April 2019, Orlando, FL. "Communicating chemistry to the public through art in a senior chemistry seminar course." Edith Osborne. Chosen for both the general CHED poster session and Sci-Mix.

American Society for Microbiology 107th General Meeting, May 21-25, 2007, Toronto, Canada. "M13 phage display as an *in vivo* reporter of nonsense suppression."

20th Enzyme Mechanisms Conference, January 3-6, 2007, St. Pete Beach, Florida. "M13 phage display as an *in vivo* reporter of nonsense suppression."

2006 International Conference on Aminoacyl-tRNA Synthetases, October 1-6, 2006, San Diego, California. "M13 Phage Display as an *In Vivo* Reporter of Nonsense Suppression."

Biophysical Society 48th Annual Meeting, February 14-18, 2004, Baltimore, Maryland. "Probing Potential Metal Binding Sites in a Kissing Loop Hammerhead Ribozyme."

Presentations by Undergraduate Research Students:

Angelo State University Undergraduate Research Symposium Spring 2023. Doyeon Kwon, Jiyun Jeong, and Edith Osborne. Identification of Affibody Molecules that Target Phospholipase A2.

Texas Academy of Science 126th Annual Meeting, San Angelo, TX. Doyeon Kwon, Jiyun Jeong, and Edith Osborne. Identification of Affibody Molecules that Target Phospholipase A2.

Taylor Parmer, Dhiraj Shrestha, and Edith M Osborne. Identification of Affibody Molecules that Target Crotalid Snake Venoms and Targeted Protein Identification. Angelo State University Undergraduate Research Symposium. Spring 2021

ASU Undergraduate Research Symposium Spring 2021, San Angelo, TX. Lily Ellzey and Edith M Osborne. Selection of Affibody Clones that Bind to the Human Signaling Protein WNT-7a. Angelo State University Undergraduate Research Symposium. Spring 2021

National American Chemical Society Meeting, April 2019, Orlando, FL. "Identification of affibody molecules that target crotalid snake venoms and targeted protein identification." Clancy Collom, Christopher Garcia, Edith M Osborne, Christopher J Noren, and Karen A Noren.

Angelo State University Undergraduate Research/Creative Endeavor Symposium, April 2019, San Angelo, TX. "Identification of affibody molecules that target crotalid snake venoms and targeted protein identification." Clancy Collom, Christopher Garcia, Edith M Osborne, Christopher J Noren, and Karen A Noren.

Angelo State University Undergraduate Research/Creative Endeavor Symposium, April 2019, San Angelo, TX. "Development and Identification of Affibody Molecules that Target Agkistrodon piscivorus conanti Venom." Sarah Champagne and Edith M. Osborne.

ASU Undergraduate Research Symposium April 2018, San Angelo, TX. "Development and identification of affibody molecules that target crotalid snake venoms." Clancy Collom, Christopher Garcia, Jung Ah Kim, Amber Sullivan, Madison Sudduth, Karen A. Noren, Christopher J. Noren, E. Osborne

Southwest Regional American Chemical Society Meeting, October 2017, Lubbock, TX. "Development and identification of affibody molecules that target crotalid snake venoms." Clancy Collom, Christopher Garcia, Jung Ah Kim, Amber Sullivan, Madison Sudduth, Karen A. Noren, Christopher J. Noren, E. Osborne

National American Chemical Society Meeting, April 2017, San Francisco, CA. "Development and identification of affibody molecules that target crotalid snake venoms." Amber Sullivan, Madison Sudduth, Karen Noren, Christopher J. Noren, and Edith M. Osborne.

National American Chemical Society Meeting, March 2014, Dallas, TX. "Hoffmeister Effects on the Structure and Fluorescence of Green Fluorescent Protein." Joshua T. McGuire, Edith M. Osborne, and John J. Osterhout.

Great Plains Honors Council, March 2014, Fort Smith, AK. "Hoffmeister Effects on the Structure and Fluorescence of Green Fluorescent Protein." Joshua T. McGuire, Edith M. Osborne, and John J. Osterhout.

Tri-Beta Southwest Regional Convention, April 2014, Lake Texhoma, OK. "Hoffmeister Effects on the Structure and Fluorescence of Green Fluorescent Protein." Joshua T. McGuire, Edith M. Osborne, and John J. Osterhout.

Angelo State University Top Scholars Recruiting Event, March 2014, San Angelo, TX. "Hoffmeister Effects on the Structure and Fluorescence of Green Fluorescent Protein." Joshua T. McGuire, Edith M. Osborne, and John J. Osterhout.

Angelo State University Undergraduate Research/Creative Endeavor Symposium, April 2014, San Angelo, TX. "Hoffmeister Effects on the Structure and Fluorescence of Green Fluorescent Protein." Joshua T. McGuire, Edith M. Osborne, and John J. Osterhout.

Tri-Beta National Convention 2nd place poster presentation in the Cell and Micro Group I, June 2014, Erie, Pennsylvania. "Hoffmeister Effects on the Structure and Fluorescence of Green Fluorescent Protein." Joshua T. McGuire, Edith M. Osborne, and John J. Osterhout.

National Collegiate Honors Council, November 2013, New Orleans, LA. Poster Presentation. "Hoffmeister Effects on the Structure and Fluorescence of Green Fluorescent Protein." Joshua T. McGuire, Edith M. Osborne, and John J. Osterhout.

South Central Regional Tri-Beta Conference, Kingston, OK, April 6, 2013. Oral Presentation. "Hoffmeister Effects on the Structure and Fluorescence of Green Fluorescent Protein." Joshua T. McGuire, Edith M. Osborne, and John J. Osterhout.

Texas Undergraduate Research Day at the Capitol, April 26, 2013. Poster Presentation. "Hoffmeister Effects on the Structure and Fluorescence of Green Fluorescent Protein." Joshua T. McGuire, Edith M. Osborne, and John J. Osterhout.

Texas Undergraduate Research Day, February 14, 2011, Austin, Texas. "Comparison of group I intron activity based on sequence length using an *in vivo* screening system." William Register and Edith M. Osborne.

241st American Chemical Society National Convention, March 26-30, 2011, Anaheim, California. "Comparison of group I intron activity based on sequence length using an *in vivo* screening system." William Register and Edith M. Osborne.

Tribeta Biology Honors Society Regional Convention, April 2011, Lake Texoma, Oklahoma. "Comparison of group I intron activity based on sequence length using an *in vivo* screening system." William Register and Edith M. Osborne.

241st American Chemical Society National Convention, March 26-30, 2011, Anaheim, California. "*In vitro* Stability Studies of an RNA triplex." Mary Elizabeth Leffel and Edith M. Osborne.

American Chemical Society 239th National Meeting, March 21-24, 2010, San Francisco, California. "Development of an *in vivo* screening system for group I introns." William G. Register and Edith M. Osborne.

SYNERGISTIC ACTIVITIES

- Girl Scout STEM Conference workshop leader, day conference 6th-12th grade girls that encourages them to pursue careers in STEM Fields (2009-present)
- Angelo State University, American Chemical Society Student Chapter co-sponsor (2008-present)
- Reviewer for American Chemical Society student chapter reports (2012-present)
- Designed and ran a chemistry workshop for the 2014, 2015, and 2016 Howard College STEM Camp
- Initiated and helped organize the first "ASU Night at the Art Walk", close to 1000 people attended the event (March 2014)
- Presented a session about pre-health careers at ASU at the 2014 and 2015 AHEC Health Careers Camp
- Served as a panelist for the "Making the Most of your First ACS Meeting" session for undergraduate students at the 2014 National ACS Meeting in Dallas, TX
- Designed and organized workshops for the San Angelo Museum of Fine Arts Elements of Art and Nature camps for 7-9 year old students and for 10-12 year old students (June 2015, 2016, 2017, and 2018)
- Served as a BioRad Ambassador (2014 to present) and present the BioRad DNA Extraction Kit (isolating cheek cell DNA from students and putting in an amulet for them to wear) to promote the love of science
- Designed and organized an Art and Science Family Day at the San Angelo Museum of Fine Arts (April 2013, 2014, 2015, 2016, 2017, 2018)

Departmental Committees

Chemical Information and Technology Committee (2008-present)
Library Liaison (2009-present)
Curriculum Committee (2008-present)
Scholarship and Awards Committee (2009-present)
Organic Assistant Professor hiring committee, chair (2017)
Tenure and Promotion Committee (2014-present)
Lab coordinator hiring committee (summer 2010)
Organic Assistant Professor hiring committee (2010-2011)
Lecturer hiring committee (summer 2011)
Inorganic and Physical Chemistry hiring committees (spring 2012)
Physical Chemistry hiring committee, chair (spring 2013)

College of Science Committee

Curriculum Committee (2009-present)
College of Sciences Tenure and Promotion Committee, chair (2015-2016)

University Committees

Institutional Biosafety Committee, chair (2016-present)
University Curriculum Committee (2016-present)
Health Profession Advisory Committee (HPAC) (2012-present)
Holland Symposium on American Values Committee (2014-2015)
Faculty Senate (2011-2013)
Vice-Provost Ad-hoc committee: Operating Policy Work Group (fall 2011-2012)
Program Review Committee (2010)
University Center Board (2009-2010)
University master goal subcommittee for recruiting and retention (spring 2009)