Meredith Ogle, Ph.D.

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EDUCATION

Rice University, Houston, TX	Advisor: Angel Martí	
PhD in Chemistry	GPA: 3.97	**Graduated Dec 2019**
MA in Chemistry		**Graduated Dec 2016**
Trinity University, San Antonio, TX	Advisor: Nancy Mills	
BS in Biochemistry & Molecular Biology	GPA: 3.42	**Graduated May 2014**

TEACHING EXPERIENCE

Adjunct Professor

University of the Incarnate Word 2025-2026

Chemical Principles Lab II	CHEM1102
Organic Chemistry Lab II	CHEM2112

Guest Lecturer

St Mary's University Fall 2024		Under the supervision of:
Cell Biology	BL2332	Terry Shackleford
Analytical Chemistry	CH3423	Susan Oxley
UTHealth San Antonio Fall 2023		
Basic Science Training for Medical Students	ELEC 5061	Chris Valdez

Teaching Assistant

Rice University 2014 - 2019

General Chemistry Lecture	CHEM 121 & 122	Lesley O'Leary
General Chemistry Lab	CHEM 123 & 124	Lesley O'Leary
Inorganic Lecture	CHEM 366	Angel Martí
Organic Chemistry Lab	CHEM 215	Carrie McNeil
Organic Chemistry Lab	CHEM 365	Paul Engel

- Led lab and discussion sessions with minor supervision
- Contributed to the design of the course syllabus, optimized experimental methods, evaluated prior labs, and updated lab manual to include purposeful, engaging explorations
- Trained new graduate student TAs in student engagement and experimental procedures

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RESEARCH EXPERIENCE

Postdoctoral Training **UT Health San Antonio 2021- present**

Uncovering the mechanism for how hyperacetylation of MnSOD can lead to chemotherapy resistance

Studying how disrupting the SIRT3/ACSS1 axis leads to a stemness phenotype in breast cancer

Researching cancer metabolism through the SIRT3/ACAT1 axis and Warburg Effect
Conducted laboratory experiments involving preclinical models
Published research findings in peer-reviewed journals and presented at national conferences
Mentored and trained junior research team members, including Ph.D. candidates, master's students, and undergraduates
Supported equipment maintenance, protocol development, and modeled best practices in scientific rigor, record-keeping, lab safety, and team collaboration

Graduate Research **Rice University 2014-2019**

Synthesized a $[Re(bpy)(py)(CO)_3]^+$ doped MOF for photooxidation of olefins and sulfones
Designed, synthesized, and tested non-toxic cyclometalated iridium (III) complexes and BODIPY derivatives for intracellular temperature mapping
Synthesized and characterized lanthanide-doped graphene quantum dots
Collaborated with medical professionals to discover and characterize a new stem cell-like cancerous cell line
Published research findings in peer-reviewed journals and presented at national conferences
Performed maintenance such as maintaining/cleaning equipment, organizing repair procedures, maintaining stocks, and providing general research group support as needed
Engaged in collaborative meetings with other research groups. Attended and led scientific seminars
Contributed to project management and facilitated collaboration across disciplines and institutions
Mentored undergraduate and high school students, facilitating them to gain admission to summer programs and colleges of their choice
Supervised the implementation of safety procedures and worked with EHS

Undergraduate Research **Trinity University 2011-2014**

Synthesized antiaromatic organic frameworks as references to theoretical simulations
Mentored other undergraduate researchers in synthesis, analysis, and drafting reports
Presented findings at national conferences

SERVICE

Trinity University SPURS Sorority Alumni Advisor **2021-present**
UTHSCSA Postdoctoral Association Board Member **2024-2025**
National IRACDA Conference Planning Committee **2022-2023**
Rice Chemistry Department Recruitment Chair **2016-2017**
Rice Chemistry Graduate Student Association Social Chair **2016-2018**

HONORS & AWARDS

NIGMS IRACDA Fellow, UTHealth San Antonio, **July 2023 – June 2025**
T32 Biology of Aging Training Grant Fellow, UTHealth San Antonio, **March 2022 – March 2023**
Best Poster by a Student, 7th Annual Resident Research Day Symposium, Michael E. DeBakey of Surgery, Baylor College of Medicine, **June 2019**
Finalist for Rice Graduate Teaching Award, Rice University **2019**
Women in Natural Science Travel Grant, Wiess School of Natural Science, Rice University, **2018**

Harry B. Weiser Leadership Award, Chemistry Department, Rice University, **2017**
Harry B. Weiser Teaching Award, Chemistry Department, Rice University, **2015**
Outstanding Senior Organic Chemistry Student, American Chemical Society Division of Organic Chemistry **2014**
Undergraduate Award in Organic Chemistry, Chemistry Department, Trinity University, **2014**
McGavock Endowed Scholarship, Chemistry Department, Trinity University, **2012**
SCAC Academic Honor Roll, NCAA DIII **2011**

PUBLICATIONS & PRESENTATIONS

Sung-Jen, W., Schell, J., Qian, W., Silguero, M., Baseviciene, A., Chen, W.H., Trevino Jr, R., Chocron, E.S., **Ogle, M.M.**, *et al.* "Divergent Sex-specific Effects on a Ketogenic Diet: Male, but not Female, Mice Exhibit Oxidative Stress and Cellular Senescence" *Cell Reports* **2025**, 44(8):116026. DOI: 10.1016/j.celrep.2025.116026

Ogle, M.M. et al. "Manganese Superoxide Dismutase in Cancer Biology and Therapy" Antioxidants **2022**, 11(4):635. DOI: 10.3390/antiox11040635

Ling, K., **Ogle, M. M.** et al. "Exploring the Photophysical Properties of UiO-67 MOF Doped with Rhenium Carbonyl Complexes" *Journal of Photochemistry* **2022**, 11:100127. DOI: 10.1016/j.jpap.2022.100127

Ogle, M. M. *et al.* "Latest Trends in Temperature Sensing by Molecular Probes" *ChemPhotoChem* **2020** DOI: 10.1002/cptp.201900255

Smith McWilliams, A. D., Ergulen, S., **Ogle, M. M.** *et al.* "Fluorescent Surfactants from Common Dyes – Rhodamine B and Eosin Y" *Pure and Applied Chemistry* **2020** DOI: 10.1515/pac-2019-0219

Liang, J., Han, X., Yang, J., Zhang, B., Fang, Q., Zhang, J., Ai, Q., **Ogle, M. M.**, Terlier, T., Marti, A. A., Lou, J. "Defect-Engineering-Enabled High-Efficiency All-Inorganic Perovskite Solar Cells" *Advanced Materials* **2019** DOI: 10.1002/adma.201903448

Ogle, M. M. *et al.* "Sensing Temperature In Vitro and in Cells Using a BODIPY Molecular Probe" J*. Phys. Chem. B* **2019** DOI: 10.1021/acs.jpcb.9b04384

McDowell, M. *et al.* "Singular Wavelength Dependence on the Sensitization of Lanthanides by Graphene Quantum Dots" *Chem. Comm*. **2018** DOI: 10.1039/c8cc01264d

SEMINARS
07/10/2024 "Avasopasem manganese (GC4419) reverses tamoxifen resistance due to hyperacetylation in breast cancer" UTHealth San Antonio TX, Barshop Summer Trainee Seminar Series, Host: Lu Wang
04/17/2024 "Dysfunction of SIRT3 and its downstream targets leads to stemness in breast cancer" UTHealth, San Antonio, TX, Barshop Seminar Series, Host: Shangang Zhao
10/13/2023 "Dysfunction of breast cancer metabolism may lead to increased transformation" St Mary's University, San Antonio, TX, Host: Ahmad Galaleldeen
10/06/2023 "Dysfunction of breast cancer metabolism may lead to increased transformation" Our Lady of the Lake University, San Antonio, TX, Host: James Hall
06/28/2023 "Dysregulation of the SIRT3/ACSS1 axis leads to stemness in breast cancer" UTHealth San Antonio, TX, Barshop Summer Trainee Seminar Series, Host: Adam Salmon
03/19/2014 "Dications of 5,5'-Bis-indenylidenes: Modifying patterns of delocalization", Oral Presentation ORGN 602, ACS 247th National Meeting, Dallas, TX

POSTERS
American Society for Biochemistry and Molecular Biology National Meeting Meredith Ogle, Gloria Martinez, David Gius "Manganese superoxide dismutase hyper-acetylation in breast

cancer” **April 13, 2025, Chicago, IL**

San Antonio Postdoc Research Forum Meredith Ogle, Gloria Martinez, David Gius “Hyperacetylation of MnSOD can lead to stemness phenotype in breast cancer” **Sept 17, 2024, San Antonio, TX**

IRACDA National Conference Meredith Ogle, Gloria Martinez, David Gius “Hyperacetylation of MnSOD can lead to stemness phenotype in breast cancer”, **Jun 2024, Chapel Hill, NC**

San Antonio Postdoc Research Forum Meredith M. Ogle, Mahboubeh Varmazyad, Gloria Martinez, Sung-Jen Wei, Nobuo Horikoshi, David Gius “Inability to utilize altered fuel source may lead to lineage plasticity in breast cancer” **Sept 19, 2023, San Antonio, TX**

IRACDA National Conference Meredith M. Ogle, Mahboubeh Varmazyad, Gloria Martinez, Sung-Jen Wei, Nobuo Horikoshi, David Gius, “Dysregulation of SIRT3/ACSS1 axis leads to stemness” **Jun 2023, San Antonio, TX**

San Antonio Postdoctoral Research Forum Meredith M. Ogle, Mahboubeh Varmazyad, Gloria Martinez, Sung-Jen Wei, Nobuo Horikoshi, David Gius “Using SODA (syngeneic orthotopic derived allograft) mice to study how dysregulation of SIRT3/ACSS1 axis leads to stemness and linage plasticity”, Poster 146, **Sept 2022, San Antonio, TX**

Baylor College of Medicine 7th Resident Research Symposium Meredith M. Ogle, Ashleigh D. Smith McWilliams, Matthew J. Ware, Steven A. Curley, Stuart J. Corr, and Angel A. Martí “Sensing Intracellular Temperature with a BODIPY Molecular Rotor”, Poster 17, **Jun 2019, Houston, TX**

ACS 255th National Meeting Meredith McDowell, Andrew Metzger, Chong Wang, Jiming Bao, James M. Tour, and Angel A. Martí “Singular wavelength-dependent sensitization of lanthanides by graphene quantum dots”, Poster INORG 403, **Mar 2018, New Orleans, LA**

IAPS 26th Winter Conference Meredith McDowell, Matthew J. Ware, Steven A. Curley, Stuart J. Corr, and Angel A. Martí “Photoluminescent Iridium(III) Metal Complexes as Intracellular Thermometers”, **Jan 2017, Sarasota, FL**

ACS 245th National Meeting Meredith McDowell, Rahaman Navaz Gangji, Nancy S Mills “Altering delocalization patterns to evaluate antiaromaticity”, Poster CHED 996, **Mar 2013, New Orleans, LA**