Lynetta M. Mier, Ph.D.

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EDUCATION

Ph.D., Physical Chemistry, *The Ohio State University*, June 2012
Dissertation: "Electron Transfer in Organic Photovoltaic Materials Studied using Ultrafast Vibrational Spectroscopy"
M.S., Chemistry, *The Ohio State University*, March 2010
Thesis: "Electron Transfer Dynamics between 9-anthracenecarboxylic acid and TiO_2 Nanoparticles with Applications for Novel Photovoltaic Devices"
B.S., Chemistry, *Centre College*, May 2006

ACADEMIC EMPLOYMENT

Assistant Professor of Chemistry, *Regis University,* 2014-present
Classes Taught: Instrumental Analysis, Instrumental Analysis Laboratory, Physical and Computational Laboratory, Analytical Chemistry, Quantitative Analysis Laboratory, General Chemistry I, General Chemistry I Laboratory, General Chemistry II, General Chemistry II Laboratory, Environmental Chemistry, Environmental Chemistry Laboratory, Writing Analytically

Post-Doctoral Fellow and Instructor, *Boston University,* 2012-2014
Classes Taught: Introductory Chemistry, Instrumental Analysis Laboratory, Physical Chemistry Laboratory

Graduate Teaching Assistant, *The Ohio State University,* 2006-2012
Classes Taught: Honors General Chemistry I Recitation, Honors General Chemistry I Laboratory, Honors General Chemistry II Recitation, Honors General Chemistry II Laboratory, Honors General Chemistry III Recitation, Honors General Chemistry III Laboratory, Physical Chemistry Laboratory, Introductory Chemistry Recitation, University Liason for Masters of Education In-Service Program

RESEARCH ACTIVITIES

Assistant Professor of Chemistry, *Regis University,* 2014-present

- Mentored 25 undergraduate research students on indpendent research projects investigating excited state electron transfer mechanisms.
- Projects focus on mechanistic studies of photodynamic therapy and mechanistic studies on organic photovoltaics

Publications:

- Valliere, Taylor; Saumier, William; **Mier, Lynetta M.** *$^1O_2$ Quantum Yield Dependence on Varying Concentrations of Lumazine, Oxygen, and pH*, 257th ACS National Meeting & Exposition; Orlando, FL, Mar. 31-Apr. 4, 2019.
- Saumier, William; Valliere, Taylor; **Mier, Lynetta M.** *Investigation of $^1O_2$ Quantum Yield by the Photodynamic Cancer Therapy Agent Lumazine*, 257th ACS National Meeting & Exposition; Orlando, FL, Mar. 31-Apr. 4, 2019.
- Strothers, Shelby; Bobadilla-Regalado, Stephanie; **Mier, Lynetta M.** *Spectroscopic Analysis of the Interaction between DNA and the Excited State of Lumazine*, 257th ACS National Meeting & Exposition; Orlando, FL, Mar. 31-Apr. 4, 2019.
- Bobadilla-Regalado, Stephanie; Strothers, Shelby; **Mier, Lynetta M.**, *Spectroscopically Probing the Light-Initiated Reaction Between Lumazine and dAMP: Investigating the Mechanism of Cell Death in Photodynamic Cancer Therapy*, 257th ACS National Meeting & Exposition; Orlando, FL, Mar. 31-Apr. 4, 2019.
- Collyer, Colton; de Dios, Robert Christian; **Mier, Lynetta M.**, *Monitoring the Products of the Reaction Between the Potential Photodynamic Therapy Agent, Lumazine, and dAMP using HPLC*, 257th ACS National Meeting & Exposition; Orlando, FL, Mar. 31-Apr. 4, 2019.
- de Dios, Robert Christian; Collyer, Colton; **Mier, Lynetta M.**, *HPLC Analysis of the Light-Induced Reaction between Lumazine and dGMP for Applications in Photodynamic Therapy*, 257th ACS National Meeting & Exposition; Orlando, FL, Mar. 31-Apr. 4, 2019.
- de Dios, Robyn; Archuleta, Stephen; **Mier, Lynetta M.**, *Synthesis and Characterization of Electron-donating and Electron-accepting Perylene Diimide Derivates for use in Organic Photovoltaic Devices*, 255th ACS National Meeting and Exposition, New Orleans, LA, March 18-22, 2018.
- Crook, Alexandra; Cole, Celeste; **Mier, Lynetta**, *Spectroscopic Characteristics of Lumazine*, 251st ACS National Meeting & Exposition, San Diego, CA, March 13-17, 2016.
- Crook, Alexandra; Cole, Celeste; **Mier, Lynetta**, *Spectroscopic Characterizations of Lumazine*, Colorado Wyoming Academy of Science Conference, Denver CO, November 2015.

Post-Doctoral Fellow, *Boston University,* 2012-2014
Advisor: Dr. Lawrence Ziegler

Investigated solvent environments of supercritical fluids using ultrafast rotational Raman spectroscopy and ultrafast, two-dimensional infrared spectroscopy.

- Designed, maintained, and built ultrafast spectroscopy experiments, and trained all users
- Maintained and built optical systems for excited state, rotational measurements of supercritical fluids
- Developed expertise in rotational Raman spectroscopy
- Maintained ultrafast laser systems including Nd:YAG, Ti:Sapphire lasers, detectors, and supercritical fluid systems
- Programmed computational software for prediction of ultrafast rotational Raman spectra using Fortran, C, Python, R, and MatLab

Graduate Student, *The Ohio State University,* 2006-2012
Advisors: Dr. Terry L. Gustafson, Dr. Arthur J. Epstein

Investigated photo-induced electron transfer reactions using ultrafast excited state spectroscopy of thin films, nanoparticles, polymers, and organic molecules.

- Designed, maintained, and built ultrafast spectroscopy experiments, and trained all uers
- Maintained and built optical systems for steady state and excited state measurements
- Developed expertise in absorption, emission, Raman, and infrared spectroscopies for molecular systems
- Directed studies in electronic structure determination, kinetics measurements, and excited state processes for molecular and solid state organic systems
- Maintained ultrafast laser systems including Nd:YAG, Dye lasers, Ti:Sapphire lasers, amplifiers, optical parametric amplifers, Sum frequency generation crystals, difference frequency generation crystals, detectors, and flow pump systems
- Analyzed complex data sets using Igor Pro, Python, R, and MatLab

Publications:

- Hauser, A. J.; Soliz, J. R.; Dixit, M.; Williams, R. E. A.; Susner, M. A.; Peters, B.; **Mier, L. M.**; Gustafson, T. L. Sumption, M. D.; Fraser, H. L., et. al. *Phys. Rev. B: Condensed Matter and Materials Physics* (2012), 85(16).
- Park, June Hyoung; Carter, Austin R.; **Mier, Lynetta M.**; Kao, Chi-Yueh, Lewis, Sharlene A. M.; Nandyala, Raju P.; Min, Yong; Epstein, Arthur J. *Applied Physics Letters* (2012), 100(7).
- Min, Yong; Park, June Hyoung; Carter, Austin R.; **Mier, Lynetta M.**; Lewis, Sharlene, A.; Nandyala, Raju P.; Epstein, Arthur, J. 241st ACS National Meeting & Exposition, Anaheim, CA, March 27-31, 2011.
- **Mier, Lynetta M.**; Epstein, Arthur J.; Gustafson, Terry L. 41st Central Regional Meeting of the American Chemical Society, Dayton, OH, June 16-19, 2010.
- Hauser, A. J.; Zhang, J.; **Mier, L.**; Ricciardo, R. A.; Woodward, P. M.; Gustafson, T.L.; Brillson, L.J.; Yang, F.Y. *Applied Physics Letters* (2008), 92(22).

Undergraduate Researcher, *NSF Research Experience for Undergraduates, Old Dominion University,* Summer 2005
Advisor: Dr. Robert Dias

Integrated a total inorganic carbon/total organic carbon separation method with ICP-MS.

Undergraduate Researcher, *Centre College,* 2005-2006
Advisor: Dr. S. Keith Dunn

Conducted Raman spectroscopy of carbon monoxide absorbed on a thin film of sodium chloride.

PEDAGOGICAL EXPERIENCE

General Chemistry I Laboratory Curriculum Redesign, *Regis University,* Spring 2016-present

- Designed, tested, and implemented 12 original, inquuiry-based laboratory experiments
- Managed laboratory curriculum implementation across 5-7 sections per semester with up to 4 faculty members each semester.

- Implemented online laboratory software (Chem21Labs) to facilitate feedback and learning for students in the laboratory courses.

Publications:

- **Lynetta M. Mier**; Stacy I. Chamberlin, *Leveling the Playing Field using the Laboratory Curriculum*, 25th Biennial Conference on Chemical Education, University of Notre Dame, July 29-Aug 2 (2018).
- Chamberlin, Stacy I,; **Mier, Lynetta M.** *Learning Through "Mucking About": A Radical Approach to Laboratory Curriculum*, ACS Books (submitted, 2019).

Analytical Chemistry and Instrumental Analysis Curriclum Redesign, *Regis University* Fall 2015-present

- Designed and implemented a research-based laboratory curriculum
- Designed and implemented a project-based lecture curriculum

Publications:

- **Lynetta M. Mier,** *Filling in the blanks: A Student-Designed, Research-Based Instrumental Analysis Laboratory*, 25th Biennial Conference on Chemical Education, University of Notre Dame, July 29-Aug 2 (2018).
- **Lynetta M. Mier**, *A Project-Based Analytical Chemistry Lecture Course*, 24th Biennial Conference on Chemical Education, University of Northern Colorado, July 31-Aug 4 (2016).

General Chemistry II Laboratory Curriclum Redesign, *Regis University,* Spring 2019-present

- Designed, tested, and implemented twelve original, inquiry-based laboratory experiments
- Managed laboratory curriculum implementation across 5-7 sections per semester with up to 4 faculty members each semester.
- Implemented online laboratory software (Chem21Labs) to facilitate feedback and learning for students in the laboratory courses.

National Academies Summer Institute on Undergraduate Education in Biology, *Howard Hughes Medical Institute,* June 22-27, 2015

- Designed interactive curriculum for biochemistry curriculum
- Completed intensitive training on scientific teaching methodology

Physical Chemistry Laboratory, *Boston University* 2012-2014

- Designed, authored, and implemented laboratory curriculum redesign

Instrumental Analysis Laboratory, *Boston University* 2013-2014

- Author of laboratory curriculum for newly created instrumental analysis laboratory

Physical Chemistry Laboratory, *The Ohio State University* 2008-2011

- Author of laboratory experiments, grading rubrics, writing guides, and other course materials

University Mentor for Masters of Education Licensure Program, *The Ohio State University* 2011-2012

- Mentored in-service teachers in physics and chemistry high school classrooms
- Provided feedback on lesson plans, classroom delivery, classroom management, and other aspects of secondary education

TECHNICAL SKILLS

- Expert at curriculum design, material writing, in-class instruction, and technology integration for higher education.
- Experienced with maintaining chemical instrumentation including UV-Vis, Fluorescence, FT-IR, HPLC, GC-MS, AA, and CV.
- Adept at large-scale data analysis, interpretation, and presentation, including data for curriculum assessment and analytical chemistry analysis using a variety of programming languages and software tools.

PRESENTATIONS

- University Research and Scholarship Council Research Symposia Presenter (Regis University) – Spring 2019, 2018, 2015
- Fall Faculty Conference Panelist on Undergraduate Research (Regis University) – Fall 2018
- Teaching and Learning Technology Microgrant Fair Presenter (Regis University) – Spring 2018, Spring 2016
- Magis Scalari Presenter and Co-Organizer (Regis University) – Spring 2019, 2018
- Center for Excellence in Teaching and Learning Group Work Discussion Panelist (Regis University) – Spring 2018
- Mock Writing Analytically (RCC200) Class Presenter (Regis University) – Spring 2018
- Presenter at Tri-Beta Research Night (Regis University) – Fall 2018, 2017, 2016, 2015
- Faculty Speaker for the Regis University Chapter of the National Society of Collegiate Scholars Induction Banquet (Regis University) – Spring 2017
- Discussion Leader, Environmental Aspects of GMOs Brown Bag Lunch (Regis University) – Spring 2017
- Discussion Leader, Environment and Religion Brown Bag Lunch (Regis University) – Spring 2014

AWARDS

- Teaching and Learning Technology Microgrant Recipient – 2019, 2017, 2015
- Advisor of the Year, Regis College – 2017-2018

UNIVERSITY SERVICE

- Faculty Senate Representative – 2019
- Committee Member for Pharmaceutical Sciences Faculty Search – 2018-2019
- Author and Organizer of Claire Booth Luce Foundation Grant – Spring 2019
- Member of the College Core Curriculum Committee – 2015-2019
- First-Year Experience Rhetoric and Composition Faculty Search Committee Member – 2017-2018

- Member of Academic Care Team – 2017-2018
- Member of Ignation Advising Network –2016-2017
- Evaluator, Organizer, and Author of Scholarship Exam Weekend Events and Exams – 2014-2017

DEPARTMENTAL SERVICE

- Coordinator, analyst, and writer for annual Departmental Assessment – 2017-2019
- Curriculum redesign coordinator and author for CH231 – 2019
- CH410/CH485 CCCC+RUAC Proposal Author – 2018
- CH210 Substitute Lecturer for John Jean – 2017
- Organized Graduation Reception – 2018, 2017, 2016
- Professional Development Seminar Series Co-Organizer – 2015-2017
- Organizer of Chemistry Extravaganza – 2014-2017

ADVISING SERVICE

- Academic Advisor to Chemistry Majors and First-Year Students 2014-2019
- Recommendation Letter Writer – 2014-2019
- Honors Thesis Advisor – 2015-2019
- Sophomore IN Mentor – 2015-2017
- Mentoring of Chemistry Tutors – 2014-2016
- Chemistry Club Advisor – 2014-2019

COMMUNITY SERVICE

- Co-Organizer of Science Sunday - 2016-2019
- Organizer of Chemistry Table at Science Night for Warder Elementary School – 2018-2019
- March2College Day Class Experience – 2019
- Organizer of Chemistry Experience for 4th Graders – 2017-2018
- Organizer of Chemistry Experience for 5th and 6th Graders – 2017
- Volunteer at Solar Eclipse Viewing Party – 2017
- Organizer of Chemistry Experience for RU SciTech – 2015-2019

PROFESSIONAL DEVELOPMENT

- Queer Inclusivity Faculty Discussion Group – 2019
- Ignation Summer Institute II – 2017
- RCC200 (Writing Analytically) Curriculum Design Training – 2017
- Ignation Advising Network Conference – 2016
- New Faculty Learning Community – 2014-2015
- Western Conversations in Jesuit Higher Education Conference - 2015

PROFESSIONAL MEMBERSHIPS

- American Chemical Society
- Council of Undergraduate Research