

Sara E. S. Martin

Assistant Professor
Chemistry Department
Program in Biochemistry and Molecular Biology
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Education

August 2014 Ph.D., Organic Chemistry, *University of Delaware*
Advisor: Professor Donald A. Watson
Dissertation title: *Development of the Silyl-Heck Reaction: Preparation of Organosilanes via the Transition Metal-Catalyzed Silylation of Alkenes*

May 2009 B.S. in Chemistry, *Lebanon Valley College, summa cum laude*
Advisor: Professor Timothy J. Peelen

Teaching Experience

2025-present Associate Professor of Chemistry
2018-2025 Assistant Professor of Chemistry
The College of Wooster, Wooster, OH
Courses taught: General Chemistry II, Organic Chemistry I and II and laboratories, BCMB Junior Independent Study, BCMB and CHEM Senior Independent Study, First-Year Seminar
Research with students:

- Synthesizing quinolinones from *meta*-substituted anilines
- Investigating the enzyme NagZ for glucosaminidase activity against bacterial cell wall precursor Lipid II.
- Developing inhibitors for bacterial enzyme MurG.
- Studying the impact of the Phone a STEM Professional assignment on student sense of belonging, career confidence, and career awareness.

Fall 2016 Adjunct Faculty in Department of Chemistry and Physics
Simmons College, Boston, MA
Instructor: CHEM113 Lab, Inquiry based general chemistry laboratory for majors.

Fall 2011, 2012 Graduate Teaching Assistant, graduate level Biochemistry I
University of Delaware, Newark, DE
Recitator: independently designed and lead discussion sections incorporating inquiry-based activities, responsible for design of online assessments and for exam, problem set, and online assessment grading for a course of 100 students

Spring 2011 Graduate Teaching Assistant, Chemistry and the Human Environment
University of Delaware, Newark, DE

Spring 2009 Student teaching at Northern Lebanon High School, Fredericksburg, PA
Cooperating teacher: Henry Saner; Supervising professor: Karen Walker
Taught at college preparatory, honors, and AP levels. Designed lessons using backward course design and incorporating active learning techniques

Spring 2008 Undergraduate Teaching Assistant, General Chemistry
Lebanon Valley College, Annville, PA

Diversity, Equity, Inclusion, and Respect

2025-2026 Inclusive Research Mentoring Professional Learning Community participant

2022-2024 Chemistry and BCMB Representative to STEM Success Initiative Advisory Board

2021-2025 Member, organizing committee for Midwest chapter of Empowering Women in Organic Chemistry. Twitter: @MidWestEWOC *EWOC is focused on mentorship and networking opportunities for women in organic chemistry, broadly defined.*

January 2022	Worked with Course Design Assistant, Joel Brown (BCMB '22) who began to develop a database of organic chemists who hold a variety of diverse identities, and whose work connects to or extends concepts from the organic chemistry curriculum (CHEM 211, 212, 313).
October 2021	Participant, National Institute on Scientific Teaching discussion "A Framework for Understanding Faculty Conceptions of Diversity, Equity, and Inclusion," facilitated by Amber Heidbrink, postdoctoral research associate at UCSD.
Summer 2021	Worked with Joel Brown (BCMB '22) to develop a guide for international students in chemistry courses. <i>This was part of a STEM Success Initiative project to provide guides for international students in STEM disciplines. The work was funded through a GLCA Internationalization Mini-Grant. Each guide has some general information on success in STEM (at Wooster and at American colleges) and specific-to-department information geared to first-year international students in introductory STEM courses.</i>
Summer 2021	The Inclusive STEM Teaching Project, MOOC, Boston University edX. <i>Modules included: DEI in learning/teaching in higher education, centering instructor and student identities, developing inclusive curriculum, and establishing a positive classroom climate. Women/Womxn affinity group participant. ~24 hours of synchronous and asynchronous activities.</i>
April 2021	Invited faculty attendee at MiSTEM (Overcoming) Failure Dinner
11/2019, 12/2022	Faculty Guest in STEM Zone Get-to-Know the Faculty series
2018-2024	Regular attendee of STEM Faculty Learning Community meetings
August 2018-2022	Annual STEM Success Initiative Building Inclusive Classrooms Workshop
2018-present	Phone a STEM Professional assignment. <i>Developed for students in general and organic chemistry courses to provide networking and career exploration opportunities with Wooster STEM alumni and individuals in faculty professional networks. I am using pre- and post-assignment surveys to understand the impacts of this assignment on student sense of belonging in STEM and their career awareness and career confidence. This project is approved by the College of Wooster Human Subjects Research Committee.</i>

Research Experience prior to Wooster

2014-2018	NIH NRSA Postdoctoral Research Fellow, PI: Suzanne Walker <i>Harvard Medical School, Boston, MA</i> Project: Developing new tools for the study of O-GlcNAc transferase in disease
2009–2014	Graduate Research Assistant, PI: Donald A. Watson <i>University of Delaware, Newark, DE</i> Project: Developed new synthetic methods to form unsaturated organosilanes through transition metal activations of Si-X bonds.
2009-2011	Chemistry-Biology Interface Fellow, Directors: Brian Bahnson and John Koh <i>University of Delaware, Newark, DE</i> Rotations in biomaterials and enzymology labs. Gained exposure to mammalian and bacterial cell culture, subcloning techniques, and polymer synthesis.
2008-2009	Undergraduate Research Assistant, PI: Timothy J. Peelen <i>Lebanon Valley College, Annville, PA</i> Project: Examining the influence of potential diastereomeric interactions on the stereochemical outcome of reductions of trifluoroacetophenone in the presence of chiral additive (S)-1-phenyl-2,2,2-trifluoroethanol.

Mentorship of Undergraduate Research

College of Wooster Senior Independent Study Advisees

Senior Independent Study is a yearlong mentored research project in collaboration with a faculty mentor.
CHEM denotes B.A. in Chemistry; BCMB denotes B.A. in Biochemistry and Molecular Biology

23. Samuel Carmel, BCMB '25 Seeking Employment
 Synthesis of 7-Monosubstituted Coumarin Intermediates Using Various Bases
22. Ellen Daugherty, CHEM '25 Graduate Student, The Ohio State University

- Synthesis of Solely 7-Substituted Quinolin-2(1H)-ones via Lewis Acid Catalysis*

21. Khally Minich, CHEM '25 Admissions Counselor, The College of Wooster
Characterization of the Intermediate Species Towards the Synthesis of 7-Substituted Coumarin Derivatives
20. Silas Richard, BCMB '25 (on-campus advisor for project in Johnson Lab, Entomology, OSU CFAES)
19. Spencer Gabriel, BCMB '24 Initial Test Chemist, Omega Laboratories
Characterization of Putative Small Molecule Inhibitors of MurG and Their Effectiveness in Growth Inhibition of Escherichia coli (DH5 α), Pseudomonas frederikbergensis (36C6) and Pseudomonas chlororaphis (14B11)
18. Jason Stewart, CHEM '24 Graduate Student, Pei Lab, The Ohio State University
Toward Demonstrating the Synthetic Utility of 7-substituted-quinolin-2(1H)-ones in Organic Synthesis
17. Marisol Varela Ausec, CHEM '24 Analyst at LabCorp, Bioanalytical Department
Synthesis of 7-Substituted Quinolinones from Meta-Substituted Anilines: Investigating Whether the Product Selectivity Increases with Steric Bulk of Aniline R-Groups in an Isoelectronic Series
16. Aileen Yeo CHEM '24 Graduate Student, Georgia Tech
Toward a More Efficient and Selective Synthesis of Exclusively 7-substituted Coumarins
15. Patrick Wood, BCMB '23 Graduate Student, Stelzer Lab Case Western Reserve University
Determining the Crystal Structure of Staphylococcus aureus
14. Elliott Wright, CHEM '23 Seeking Employment
Investigating the Effect of Steric Bulk of Anilines in the Synthesis of Quinolinones
13. Kyla Babics, BCMB '21 STNA, Mercy Health - Allen Hospital, Oberlin, OH
Investigating the Effects of the Phone a STEM Professional Assignment on STEM Students' Sense of Belonging, Career Confidence, and Career Awareness
12. Peter Greenwood, BCMB '21 Analytical Chemist, Alpha Analytical
Purification and Crystallization of MurG: Towards Structural Characterization of a Ubiquitous Antibiotic Target
11. Robert Hunt BCMB '21 Manufacturing Research Associate II, Bruker Spatial Biology
Exploring Peptidoglycan Synthesis: Assessing the Viability of NagZ as a Potential Tool for Obtaining Lipid I
10. Kejun (Coco) Liu BCMB '21 Graduate Student, Johns Hopkins School of Public Health
Deciphering the 'Logic Puzzle' of Traditional Chinese Herbal Medicine: Investigating Cooperative Protective Effects of Artemisinin and Hyperoside Against Oxidative Damage in Saccharomyces cerevisiae
9. Anna Schroeder, CHEM '21 Graduate Student, Watson Lab University of Delaware
Multi-step Synthesis of Small Molecules as Potential Inhibitors of MurG
8. Craig Deng BCMB '20 Medical Assistant, OrthoNeuro
Toxicity Analysis of OGT Inhibitor Et-OSMI-2 Against Strains of E. coli and Pseudomonas
7. Matthew Mahoney-White BCMB '20 Travel ICU Nurse, Aya Healthcare
Organic Synthesis of Potential Small-Molecule Inhibitors for MurG: A Research Tool for Investigating Cell Wall Biosynthesis in Bacteria
6. Leman Simpson BCMB '20 Graduate Student, L. Bai Lab, Pennsylvania State University
Expression, Purification, and Crystallization of S. aureus MurG: Towards Structural Characterization of a Putative Antibiotic Target
5. Regan Szalay CHEM '20 Consultant, Putnam Associates
Synthesis of Potential Small-Molecule Inhibitors for MurG, a Glycosyltransferase Involved in Bacterial Cell Wall Biosynthesis
4. Russell Boston, III BCMB '19 Medical Student, Philadelphia College of Osteopathic Medicine

Save Our Masses from Starving: Development of a SOMS-Based Spatiotemporal Phytohormone Delivery System” (supervised thesis writing, Spring 2019)

3. Ian Mundy CHEM '19 Chemist, US Environmental Protection Agency, Duluth, MN and Graduate Student, University of Minnesota, Duluth
All Aboard! The Identification of Inhibitor Candidates for the Bacterial Enzyme MurG via Molecular Docking Simulations
2. Noelle Sadallah, BCMB '19 Associate Scientist at Syensqo
Facilitating Studies of Peptidoglycan Synthesis: Optimizing NagZ Production to Enable Access to Lipid I
1. Rada Zunich, CHEM '19 US Medical Communications Lead, Alexion Pharmaceuticals
Toward Inhibitors of MurG: Identifying Fragments that Could Bind to MurG as a Starting Point for Inhibitors of Bacterial Cell Wall Biosynthesis

Additional College of Wooster Research Advisees

* Sophomore Research Program	#Sherman Fairchild Foundation grant
†Future/Former Independent Study Student	‡Whitmore-Williams Scholar
2023	Olivia Galando '25* Marisol Varela Ausec '24†
2022	Mary Payne '24* Marisol Varela Ausec '24*†
2021	On research leave
2020	Institutional pause due to COVID-19 Pandemic
2019	Regan Szalay '20†‡ Lydia Bruno '21# Coco Liu '21#† Noelle Sadallah '19#†

Harvard Medical School

Frederick Moss	2016-2018	Deceased B.S. Morehouse College, 2016
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University of Delaware

3. Naijing Su	2012-2013	Senior Research Investigator at Incyte B.S. University of Delaware, 2013 Ph.D. University of Illinois at Chicago, 2018
2. Keywan Johnson	2011-2013	Senior Scientist at Merck B.S. University of Delaware, 2013 Ph.D. University of Wisconsin-Madison, 2019
1. Derek Ahneman	2010-2012	Product Manager at IBM Research B.S. University of Delaware, 2012 Ph.D. Princeton University, 2017

Publications (* undergraduate co-authors are underlined, †equal contribution/co-presenter)

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Publications authored at The College of Wooster

14. **Martin, S.E.S.**; Heiser, G.; Babics, K.S.; Morrison, J. "Phone a STEM Professional: A Career Exploration Activity with Impacts on Career Confidence and STEM Identity Development," *manuscript in preparation*
13. Varela Ausec, M.; Payne, M.K.; Stewart, J.R.; Wright, E.J.; Galando, O.M.; **Martin, S.E.S.**; "A Simple Route to 7-substituted Quinoline-2(1H)-ones from Meta-Substituted Anilines," *Results Chem.* **2025**, **2025**, 14, 102089. <https://doi.org/https://doi.org/10.1016/j.rechem.2025.102089>

Publications from Mentored Research

12. Duveau, D.Y.; **Martin, S.E.S.**; Jiang, J.; Ortiz-Meoz, R.F.; Lazarus, M.B.; Janetzko, J.; Itkonen, H.M.; Thomas, C.J.; Walker, S., "Development of Small Molecule Inhibitors of O-linked N-Acetyl Glucosamine Transferase (OGT)," *manuscript in preparation*.
11. Itkonen, H.M.; Poulou, N.; Steele, R.E.; **Martin, S.E.S.**; Levine, Z.G.; Duveau, D.Y.; Carelli, R.; Singh, R.; Urbanucci, A.; Loda, M.; Thomas, C.; Mills, I.G.; Walker, S., "Inhibition of O-GlcNAc Transferase Renders Prostate Cancer Cells Dependent on CDK9," *Mol. Cancer Res.*, **2020**, *18*, 1512.
10. Tan, Z.-W.; Fei, G.; Paulo, J.A.; Bellaousov, S.; **Martin S.E.S.**; Duveau D.Y.; Thomas C.J.; Gygi, S.P.; Boutz, P.L.; Walker, S. "O-GlcNAc regulates gene expression by controlling detained intron splicing," *Nucleic Acids Res.* **2020**, *48*, 5656.
9. Itkonen, H.M.; Urbanucci, A.; **Martin. S.E.S.**; Khan, A.; Mathelier, A.; Thiede, B.; Walker, S.; Mills, I.G., "High OGT Activity is Essential for MYC-driven Proliferation of Prostate Cancer Cells," *Theranostics* **2019**, *9*, 2183.
8. **Martin, S.E.S.**[†]; Tan, Z.-W.[†]; Itkonen, H.M.; Duveau, D.Y.; Paulo, J.A.; Janetzko, J.; Boutz, P.A.; Törk, L.; Moss, F.A.; Thomas, C.J.; Gygi, S.P.; Lazarus, M.B.; Walker, S., "Structure-based Evolution of Low Nanomolar O-GlcNAc Transferase Inhibitors," *J. Am. Chem. Soc.* **2018**, *140*, 13542.
7. Matano, L.[†]; Morris, H.[†]; Hesser, A.[†]; **Martin, S.E.S.**; Lee, W.; Owens, T.; Laney, E.; Nakaminami, H.; Hooper, D.; Meredith, T.; Walker, S., "Antibiotic that Inhibits the ATPase Activity of an ATP-Binding Cassette Transporter by Binding to a Remote Extracellular Site," *J. Am. Chem. Soc.*, **2017**, *139*, 10597.
6. Itkonen, H.M.; Gorad, S.S.; Duveau, D.Y.; **Martin, S.E.S.**; Barkovskaya, A.; Bathen, T.F.; Moestue, S.A.; Mills, I.G., "Inhibition of O-GlcNAc transferase activity reprograms prostate cancer cell metabolism." *Oncotarget*, **2016**, *7*, 12464.
5. Pasquina, L.; Santa Maria Jr., J.P.; Wood, B.M.; Moussa, S.; Matano, L.; Santiago, M.; **Martin, S.E.S.**; Lee, W.; Meredith, T.; Walker, S., "A synthetic lethal approach for compound and target identification in *Staphylococcus aureus*" *Nat. Chem. Biol.*, **2016**, *12*, 40.
4. McAtee, J.R.[†]; **Martin, S.E.S.**[†]; Cinderella, A. P.; Reid, W.B.; Johnson, K.A.; Watson, D.A. "The First Example of Nickel-Catalyzed Silyl-Heck Reactions: Direct Activation of Silyl Triflates Without Iodide Additives" *Tetrahedron*, **2014**, *70*, 4250. Invited article: 2014 Tetrahedron Young Investigator Award Symposium-in-Print.
3. **Martin, S.E.S.**; Watson D.A. "Silyl-Heck Reactions for the Preparation of Unsaturated Organosilanes" *Synlett*, **2013**, *24*, 2177-2182. Invited *SynPact* article.
2. **Martin, S.E.S.**; Watson, D.A. "Preparation of Vinyl Silyl Ethers and Disiloxanes via the Silyl-Heck Reaction of Silyl Ditriflates" *J. Am. Chem. Soc.*, **2013**, *135*, 13330-13333
1. McAtee, J.R.; **Martin, S.E.S.**; Ahneman, D.T.; Johnson, K.A.; Watson, D.A. "Preparation of Allyl and Vinyl Silanes via the Palladium Catalyzed Silylation of Terminal Olefins: A Silyl-Heck Reaction" *Angew. Chem., Int. Ed. Engl.*, **2012**, *51*, 3663-3666. Highlighted in *Chemical and Engineering News*.

Patents

1. Kahne, S.W.; **Martin, S.E.S.**, Thomas, C.J., Duveau, D.Y. O-GlcNAc Transferase Inhibitors and Uses Thereof. WO 2020/047251 A1, March 5, 2020.

PresentationsIndependent Career

24. **Martin, S.E.S.**; Varela Ausec, M.; Payne, M.K.; Stewart, J.R.; Galando, O.M.; Wright, E.J.; Daugherty, E.F.; Minich, K.; Carmel, S. "A simple route to 7-substituted quinolinones from meta-substituted anilines," Bioorganic Gordon Research Conference, Andover, NH, June 19, 2025 (Poster).
23. **Martin, S.E.S.**; Schen, M.S.; Babics, K.M. "Impact of the Phone A STEM Professional Assignment on Undergraduate Chemistry Students' sense of belonging and persistence," Biennial Conference on Chemical Education, Lexington, KY, July 31, 2024 (Oral).
22. **Martin, S.E.S.** "Tools for Attenuating Activity of Glycosyltransferases," Chemistry Seminar, Cleveland Clinic Center for Therapeutics Discovery, Cleveland, OH, July 30, 2023 (**Invited Seminar**)
21. **Martin, S.E.S.** "Tools for Attenuating Activity of Glycosyltransferases," Chemistry Seminar, Oberlin College, Oberlin, OH, October 26, 2022 (**Invited Seminar**)

20. Babics, K.M.; Schen, M.S.; **Martin, S.E.S.** "Impact of the Phone A STEM Professional Assignment on Sense of Belonging, Career Confidence, and Career Awareness Among Organic Chemistry Students," Biennial Conference on Chemical Education, West Lafayette, IN, July 31, 2022 (Oral).
19. Liu, K.; Mahoney-White, M.; Mundy, I.; Payne, M.; Schroeder, A.; Szalay, R.; Varela Ausec, M.; Zunich, R.; Salmon, C.; **Martin, S.E.S.**; "Tools for Attenuating Reactivity of Glycosyltransferases," 47th National Organic Chemistry Symposium, San Diego, CA, June 28, 2022 (Poster).
18. **Martin, S.E.S.**; "Stories from the Martin Lab," Science Round Table, The College of Wooster, Wooster, OH, April 22, 2022 (Oral)
17. **Martin, S.E.S.**; "Stories from the Martin Lab," Chemistry Seminar, John Carroll University, University Heights, OH, March 30, 2022 (**Invited Seminar**)
16. **Martin, S.E.S.**; "Stories from the Martin Lab," Chemistry Department Seminar, The College of Wooster, March 8, 2022 (Oral)
15. Babics, K.M.; Schen, M.S.; **Martin, S.E.S.** "Impact of the Phone A STEM Professional Assignment on Sense of Belonging, Career Confidence, and Career Awareness Among Organic Chemistry Students," 262nd ACS National Meeting & Exposition, Atlanta, GA, August 2021 (Poster).
14. Szalay, R.N.; [†] Mundy, I.D.; Zunich, R.; Liu, C.; and **Martin, S.E.S.** "Toward Identifying Inhibitors of a Glycosyltransferase that is Important for Bacterial Cell Wall Biosynthesis," 46th National Organic Chemistry Symposium, Bloomington, IN, June 2019 (Poster).
13. **Martin, S.E.S.**; "Developing Glycosyltransferase Inhibitors to Understand Aspects of Human and Bacterial Biology," Science Round Table, The College of Wooster, Wooster, OH, September 14, 2018 (Oral)

From Mentored Research

12. **Martin, S.E.S.**; Walker, S. "New Compounds for Studying O-GlcNAc Transferase Biology," Chemistry-Biology Interface Seminar, University of Delaware, Newark, DE, October 4, 2017 (**Invited Seminar**)
11. **Martin, S.E.S.**; Walker, S. "New Tool Compounds for Studying O-GlcNAc Transferase Biology," Department of Microbiology and Immunobiology Monday Talk, Harvard Medical School, Boston, MA, October 2, 2017 (Oral)
10. **Martin, S.E.S.**; Duveau, D.Y.; Janetzko, J.C.; Tan, Z.W.; Moss, F.A.; Itkonen, H.; Sliz, P.; Lazarus, M.B.; Thomas, C.J.; and Walker, S. "Developing New Tools for the Study of O-GlcNAc Transferase in Disease," 254th ACS National Meeting & Exposition, Washington, D.C., August 2017 (Poster).
9. **Martin, S.E.S.**; Duveau, D.Y.; Itkonen, H.; Tan, Z.W.; Janetzko, J.C.; Morris, P.; Sliz, P.; Thomas, C.J.; and Walker, S. "New Tools for the Study of O-GlcNAc Transferase in Disease," QuoVadis Symposium, Harvard Medical School, Boston, MA, May 2016 (Poster).
8. **Martin, S.E.S.** and Watson, D.A., "Preparation of Vinyl Silyl Ethers and Disiloxanes via the Silyl-Heck Reaction of Silyl Ditriflates," 43rd National Organic Chemistry Symposium, Seattle, June 2013 (Poster).
7. **Martin, S.E.S.** and Watson, D.A., "Preparation of Vinyl Silyl Ethers and Disiloxanes via the Silyl-Heck Reaction of Silyl Ditriflates," Philadelphia Organic Chemists' Club, Philadelphia, April, 2013 (Poster).
6. **Martin, S.E.S.** and Watson, D.A., "Preparation of Vinyl Silyl Ethers and Disiloxanes via the Silyl-Heck Reaction of Silyl Ditriflates," 13th Annual ACS-Philadelphia Section and Younger Chemists Committee Student Poster Session, Philadelphia, February 2013 (Poster).
5. **Martin, S.E.S.**; McAtee, J.R.; Ahneman, D.T.; Johnson, K.A.; Watson, D.A., "Preparation of Allyl and Vinyl Silanes by the Palladium-Catalyzed Silylation of Terminal olefins: A Silyl-Heck Reaction," 244th ACS National Meeting & Exposition, Philadelphia, August 2012 (Poster).
4. McAtee, J.R.; **Martin, S.E.S.**; Watson, D.A., "Preparation of Allyl and vinylsilanes by the Palladium-Catalyzed Silylation of Terminal Olefins: A Silyl-Heck Reaction," 5th Annual Frontiers at the Chemistry-Biology Interface Symposium, Philadelphia, April 2012 (Poster).
3. McAtee, J.R.; **Martin, S.E.S.**; Ahneman, D.T.; Johnson, K.A.; Watson, D.A., "Preparation of Allyl and Vinyl Silanes via the Palladium Catalyzed Silylation of Terminal Olefins: A Practical Protocol for the Silyl-Heck Reaction," CCST Research Review, University of Delaware, October 2011 (Poster).
2. McAtee, J.R.; **Martin, S.E.S.**; Ahneman, D.T.; Watson, D.A., "Palladium Catalyzed Silylation of Alkenes: A Practical Protocol for the Silyl-Heck Reaction," Frontiers in Catalysis Symposium, University of Delaware, May 2011 (Poster).

1. **Schwanger, S.E.**; Peelen, T.J., "Diastereomeric Interactions of Trifluoromethyl Containing Compounds: A Window Into the Origins of Homochirality," 11th Annual Undergraduate Research Symposium, University of Maryland, Baltimore County, October 2008 (Poster).

Presentations by Students

2. Varela Ausec, M.;† Galando, O.;† Payne, M.;† Wright, E.;† **Martin S.E.S.**; "Synthesis of 7-Substituted Quinolin-2(1H)-ones from Meta-Substituted Anilines," 48th National Organic Chemistry Symposium, South Bend, IA July 2023. (Poster)
1. Varela Ausec, M.;† Payne, M.;† Salmon, C.; **Martin S.E.S.**; "Synthesis of 7-Substituted Quinolin-2(1H)-ones from Meta-Substituted Anilines," 47th National Organic Chemistry Symposium, San Diego, CA, June 2022. (Poster)

Honors and Awards

2021	Arch Medal from Kejun (Coco) Liu, BCMB '21
2016	Ruth L. Kirschstein National Research Service Award (NIH NRSA), "New Tools for the Study of O-GlcNAc Transferase in Disease"
2014	3rd Place, 41 st Joel L. Silver Award Symposium, University of Delaware
2013	Winning Poster at 13 th Annual ACS-Philadelphia Section and Younger Chemists Committee Student Poster Session, Drexel University, Philadelphia
2012	Elizabeth Dyer Award for Excellence in Teaching, University of Delaware
2011	NSF Graduate Research Fellowship Program Honorable Mention (NSF GRFP)
2009-2011	Chemistry-Biology Interface Fellow, University of Delaware
2009	H. Anthony Neidig Award, Lebanon Valley College, awarded to top graduate across all majors for "exemplary character, scholarship, leadership, and service"
2009	American Institute of Chemistry Award (Phila. Chapter), Lebanon Valley College
2008	1 st Place Poster at 11 th Annual Undergraduate Research Symposium, University of Maryland, Baltimore County
2008	Physical Chemistry Award, Lebanon Valley College
2007	Polyed Organic Chemistry Award, Lebanon Valley College

External Grants

Submitted 11/2022	Organic Syntheses Research Grant for Faculty at Principally Undergraduate Institutions: <i>Synthesis of 7-Substituted Coumarins from Meta-Substituted Phenols</i> (not funded)
Submitted 10/2022	ACS PRF Undergraduate New Investigator Grant, <i>Synthesis of 7-Substituted Quinolin-2(1H)-ones from Meta-Substituted Anilines</i> (not funded)
Submitted 7/2022	Cottrell Scholar Award, <i>Methods for Rapid Access to 7-Substituted Quinolinones and Building Undergraduate STEM Identity Through Course-Embedded Interviews</i> (not funded)
2021	\$600, Travel Award to the National Organic Symposium to SESM
2021	\$500, Travel Award to the National Organic Symposium to research student Marisol Varela Ausec
Submitted 11/30/21	Organic Syntheses Research Grant for Faculty at Principally Undergraduate Institutions: <i>Synthesis of 7-Substituted Quinoline-2(1H)-ones from Meta-Substituted Anilines</i> (not funded)
2020-2023	\$232,158, Senior Personnel for National Science Foundation Major Research Instrumentation (MRI) grant: <i>Acquisition of a LC/QToF Mass Spectrometer to Enhance Undergraduate Research and Education in the Chemical and Biochemical Sciences</i> : Co-PIs: Edmiston, P.; Faust, J.
2016-2018	\$111,960, PI, National Institutes of Health Ruth L. Kirschstein National Research Service award (NIH NRSA): <i>New Tools for the Study of O-GlcNAc Transferase in Disease</i> (Grant Number: F32GM117704)

Internal Grant Funding

Summer 2022	\$1200 from Dr. Carl O. Schulz Endowed Chemistry Fund to support student travel to the National Organic Chemistry Symposium
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Summer 2022	~\$3700, Summer Research Student funding for Marisol Varela Ausec (CHEM '24)
Spring 2021	\$12,500 from Powell Fund allocated toward purchase of a CombiFlash instrument to support organic chemistry labs and student/faculty research
2/20/20-6/30/21	\$1243, William H. Wilson Fund, The College of Wooster
Summer 2020	~\$3700, Sophomore Summer Research Student, *awarded but not used due to COVID-19
2019-present	~\$1750 per year from Life Sciences Endowment, The College of Wooster
3/27/19-6/30/20	\$2050, Hamburger Endowment for Collaborative Projects and Program Development
2/20/19-6/30/20	\$1655, William H. Wilson Fund grant, The College of Wooster
2/7/19-12/31/19	\$26,100, Sherman Fairchild Foundation grant to The College of Wooster <i>Designing Small Molecule Reporters and an Assay of Gingipain Activity</i>
8/1/18-8/1/21	\$46,000, Startup Funding, The College of Wooster

Professional Activities

Conferences/Symposia/Workshops

June 2025	Bioorganic Gordon Research Conference, Andover, NH
Fall 2024	Curriculum to Career Faculty/Staff Learning Community, College of Wooster
July 2024	Biennial Conference on Chemical Education, Lexington, KY
July 2022	Biennial Conference on Chemical Education, West Lafayette, IN
June 2022	47 th National Organic Chemistry Symposium, San Diego, CA
August 2021	262 nd ACS National Meeting & Exposition, Atlanta, GA
June 2021	47 th National Organic Chemistry Symposium, San Diego, CA (<i>postponed to 2022</i>)
August 12, 2021	National Center for Faculty Development & Diversity workshop – <i>Cultivating your Network of Mentors, Sponsors, and Collaborators</i>
July 8, 2021	National Center for Faculty Development & Diversity workshop – <i>The Art of Saying No</i>
July 2021	American Chemical Society Reviewer Lab Certificate - <i>training on peer review</i>
June 2021	Empowering Women in Organic Chemistry 2021 virtual conference <i>Workshops attended: The Psychology of Selves: Beyond Impostor Syndrome, Take Control of Your Time: Say No, Negotiate, Delegate</i>
June 2020	Building Connections Workshop, College of Wooster, Wooster, OH
May 2020	Pathways Workshop, College of Wooster, Wooster, OH
August 2019	American Chemical Society New Faculty Workshop, Washington, D.C.
June 2019	46 th National Organic Chemistry Symposium, Bloomington, IN

Pre-Wooster

August 2017	254 th ACS National Meeting & Exposition, Washington, D.C.
July 2015	Simmons College Teaching Institute: Theory and Practice for the STEM Professions, for postdoctoral fellows interested in careers in academia, Boston
October 2013	Mid-Atlantic Association of Liberal Arts Chemistry Teachers, 47 th Meeting
June 2013	43 rd National Organic Chemistry Symposium, Seattle
August 2012	244 th ACS National Meeting & Exposition, Philadelphia
April 2012	5 th Frontiers at the Chemistry-Biology Interface Symposium, Philadelphia
October 2011	CCST Research Review, University of Delaware
May 2011	Frontiers in Catalysis Symposium, University of Delaware
November 2010	Mid-Atlantic Association of Liberal Arts Chemistry Teachers, 44 th Meeting

Professional Societies/Certifications

2023-present	American Association of University Professors (AAUP)
2016-2019	American Association for the Advancement of Science (AAAS)
2007-present	American Chemical Society, Organic and Chemical Education Divisions
2009-present	Pennsylvania Secondary Education Teaching Certificate (voluntary inactive status)

Service**Professional Organizations**

2025-present Chair - Wooster Local Section, American Chemical Society
 2022-2024 Secretary - Wooster Local Section, American Chemical Society

Manuscript Reviewer for *Chemical Biology & Drug Design***Campus Service**

2025-2026 Faculty Grievance Committee
 2022-2024 Science Round Table Co-organizer
 2020-21, 2024-25 Human Subjects Research Committee
 Fall 2019, 2022-2024 Copeland Award Committee
 2018-2025 BCMB Curriculum Committee

Department Service

2025-present Chemistry Club Faculty Advisor
 2023-present Social Coordinator, Chemistry Department
 2020 Summer Research Coordinator
 2020, 2022, 2023 Search Committees for Visiting Assistant Professors of Organic Chemistry
 2019-2020 Student Professional Development Coordinator, CHEM Senior IS Coordinator
 2019-present NMR maintenance
 2018, 2021 Search Committees for two Inorganic Chemistry Tenure-Track Positions

Internal Thesis Committees (*denotes first reader; totals: 1st reader = 22; 2nd reader = 25)

2024-2025 Samuel Carmel, BCMB*
 Ellen Daugherty, CHEM*
 Wenkai Fan, CHEM
 Khally Minich, CHEM*
 2023-2024 Young Cho, CHEM
 Spencer Gabriel, BCMB*
 Jason Stewart, CHEM*
 Marisol Varela Ausec, CHEM*
 Aileen Yeo, CHEM*
(No second readerships in Spring 2024 due to parental leave.)
 2022-2023 Eric Adadevoh, BCMB
 Samuel Belsky, BCMB
 Kylie Schmitz, BCMB
 Zoe Semersky, BCMB
 Patrick Wood, BCMB*
 Elliott Wright, CHEM*
 2021-2022 Alexa Bencic, BCMB
 Macy Bischoff, BCMB
 Joel Brown, BCMB
 Kirsten Buchan, BCMB
 Alex Gasper, BCMB
 Kylie Keller, BCMB
 Benjamin Kennedy, BCMB
 Harrison Zwolshen, BCMB
(No first readerships in 2021-2022 due to Fall 2021 research leave.)
 2020-2021 Grace Adkins, BCMB
 Kyla Babics, BCMB*

	Alexis Bauer, CHEM
	Daniel Fleming, BCMB
	Wilson Frieje, BCMB
	Peter Greenwood, BCMB*
	Eric Kraus, BCMB
	Kejun (Coco) Liu, BCMB*
	Connor Mangan, BCMB
	Marissa Norgrove, BCMB
	Anna Schroeder, CHEM *
2019-2020	Craig Deng, BCMB*
	Robert Hunt, BCMB*
	Matthew Mahoney-White, BCMB*
	Leman Simpson, BCMB*
	Regan Szalay, CHEM*
	<i>(No second readerships in Spring 2020 due to parental leave.)</i>
2018-2019	Samantha Adusumilli, CHEM
	Russell Boston III, BCMB*
	Brittany Bowman, CHEM
	Caylee Cunningham, BCMB
	Ian Mundy, CHEM*
	Sarah Pitell, BCMB
	Noelle Sadallah, BCMB*
	Rada Zurich, CHEM*

IS Project Consulting

2023-2024	Eli Harvey, CHEM, First reader: Anna Gallo
2019-2020	Eli Learn, CHEM, First reader: Paul Bonvallet

External Thesis Committees

May 2019	Cole Meier, Chemistry, Kenyon College
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Miscellaneous

October 22, 2024	Co-leader, literature context session for Chemistry students prior to Dr. Tehshik Yoon (U. Wisc.) presenting the Helen Murray Free Lectures on 10/24/24
October 17, 2024	Presenter, COW Professional Development Lunch on "Embracing Digital Tools in Teaching"
July 29, 2024	Presider, Graduate Student Chemistry Education Research Symposium, Biennial Conference on Chemical Education, Lexington, KY
June 2022	Chemistry Night Coordinator, B-WISER science camp
Spring 2022	Talking about Teaching Webinar Series, The Chronicle of Higher Education <i>Topics: The Changing Professor-Student Dynamic, How to Foster Motivation and Engagement, The Future of Grading and Assessment</i>
June 2019	B-WISER: hosted chemistry-themed model rocket workshop for middle school girls
June 2019	Poster judge at the 46 th National Organic Chemistry Symposium

Teaching and Pedagogical Development

Courses Taught

General Chemistry II – Fall '18, '19, Spring '19

Organic Chemistry I (with lab) – most fall semesters

Organic Chemistry II (with lab) – most spring semesters

Advanced Organic Chemistry – Spring '22

Intro. to Independent Study in BCMB (seminar for development of Senior I.S. projects) – Spring '19

Senior Independent Study (yearlong self-designed research project undertaken by every senior) - yearly

First-Year Seminar in Critical Inquiry

2020 The World is Your Oyster: Find Your Perfect Career

2024 Designing Your Ideal Career

Classroom Innovations

Phone a STEM Professional – This assignment connects Organic Chemistry I students with STEM Professionals, including Wooster alumni, for an informational interview; it includes reflection on career development.

Named Reaction Project – Students in Organic Chemistry II research historic and contemporary applications of a named reaction and present a poster during a classroom poster session.

Spectroscopy Oral Exam – Organic Chemistry I students learn spectroscopy early in the semester and are assessed through an oral exam gauging understanding of one of several datasets provided to students ahead of time.

Collaborative Problem Solving – Co-developer of collaborative problem-solving sets for use in Organic Chemistry I and II (with Paul Bonvallet and various visiting faculty).

Electronic Laboratory Portfolios – Co-developer of OneNote Class Notebook for electronic laboratory recordkeeping in Organic Chemistry I and II laboratories (With former laboratory coordinator Kaitlynn Arnholt. Ongoing development with Paul Bonvallet.)