Sara E. S. Martin

Assistant Professor
Chemistry Department
Program in Biochemistry and Molecular Biology
The College of Wooster
931 College Mall, Wooster, OH 44691

Telephone: (330) 263-2306
Email: samartin@wooster.edu
Website: www.linkedin.com/in/saraesmartin

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

August 2018-present — Assistant Professor of Chemistry
The College of Wooster, Wooster, OH
Courses: General Chemistry 2, Organic Chemistry 1

Fall 2016 — Adjunct Faculty in 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

Research Experience

2014-2018 — NIH NRSA Postdoctoral Research Fellow, PI: Suzanne Walker
Harvard Medical School, Boston, MA
Project: Developing new tools for the study of O-GlcNAc transferase in disease

2009–2014 — Graduate Research Assistant, PI: Donald A. Watson
University of Delaware, Newark, DE
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
University of Delaware, Newark, DE
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 *Lebanon Valley College*, Annville, PA Project: Examining the influence of potential diastereomeric interactions on the stereochemical outcome of reductions of triflouroacetophenone in the presence of chiral additive (S)-1-phenyl-2,2,2-trifluoroethanol.

Students Mentored (thesis title included where applicable)

2010-2012	Derek Ahneman, B.S. University of Delaware, Ph.D. Princeton University, currently a Data Scientist at IBM
2011-2013	Keywan Johnson, B.S. University of Delaware, currently a graduate student at Univ. of Wisconsin
2012-2013	Naijing Su, B.S. University of Delaware; Ph.D. 2018 University of Illinois at Chicago, currently Research Investigator at Incyte
2016-2018	Frederick Moss, B.S. Morehouse College; currently graduate student at Harvard University
2018-2019	Russell Boston, III, B.A. in Biochemistry and Molecular Biology, The College of Wooster, May 2019, "Save Our Masses from Starving: Development of a SOMS-Based Spatiotemporal Phytohormone Delivery System" (supervised thesis writing, Spring 2019)
	Ian Mundy, B.A. in Chemistry, The College of Wooster, May 2019, "All Aboard! The Identification of Inhibitor Candidates for the Bacterial Enzyme MurG via Molecular Docking Simulations"
	Noelle Sadallah, B.A. in Biochemistry and Molecular Biology, The College of Wooster, May 2019, "Facilitating Studies of Peptidoglycan Synthesis: Optimizing NagZ Production to Enable Access to Lipid"
	Rada Zunich, B.A. in Chemistry, The College of Wooster, May 2019, "Toward Inhibitors of MurG: Identifying Fragments that Could Bind to MurG as a Starting Point for Inhibitors of Bacterial Cell Wall Biosynthesis"
2019-2020	Craig Deng, B.A. in Biochemistry and Molecular Biology, The College of Wooster, anticipated May 2020
	Robert Hunt, B.A. in Biochemistry and Molecular Biology, The College of Wooster, anticipated May 2020
	Matthew Mahoney-White, B.A. in Biochemistry and Molecular Biology, The College of Wooster, anticipated May 2020
	Leman Simpson, B.A. in Biochemistry and Molecular Biology, The College of Wooster, anticipated May 2020
	Regan Szalay, B.A. in Chemistry, The College of Wooster, anticipated May 2020

Honors and Awards

2016	Ruth L. Kirschstein National Research Service Award (NIH NRSA)
2014	3rd Place, 41st Joel L. Silver Award Symposium, University of Delaware
2013	Winning Poster at 13th 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
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	1st Place Poster at 11th Annual Undergraduate Research Symposium, University of Maryland, Baltimore County
2008	Physical Chemistry Award, Lebanon Valley College
2007	Polyed Organic Chemistry Award, Lebanon Valley College

Publications (*indicates undergraduate co-authors,†denotes co-first author)

10. Itkonen, H.M.; Poulose, N.; Steele, R.E.; **Martin, S.E.S**; Levine, Z.G.; Duveau, D.Y.; Singh, R.; Urbanucci, A.; Thomas, C.; Mills, I.G.; Walker, S., "Inhibition of O-GlcNAc Transferase Renders Prostate Cancer Cells Dependent on High RNA Pol II CTD-Kinase Activity," *submitted.*
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**, *in press.*
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.*; Villet, R.; Hooper, D.; Meredith, T.; Walker, S., "An Antibiotic that Inhibits the ATPase Activity of an ABC 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*.

Invited Talks

October 4, 2017 University of Delaware, Chemistry-Biology Interface Seminar

Selected Posters and Presentations (*indicates undergraduate co-authors, ‡denotes co-presenter)

1. Szalay, R.N.*‡; Mundy, I.D.*; Zunich, R.*; Liu, C.*; and **Martin, S.E.S**.‡ *46th National Organic Chemistry Symposium,* Bloomington, Indiana, June 2019.
2. **Martin, S.E.S.;** Tan, Z.W.; Itkonen, H.; Janetzko, J.C.; Duveau, D.Y.; Thomas, C.J.; Sliz, P.; Lazarus, M.B.; and Walker, S. *254th ACS National Meeting & Exposition*, Washington, D.C., August 2017.
3. **Martin, S.E.S.** and Watson, D.A., *43rd National Organic Chemistry Symposium*, Seattle, June 2013.
4. **Martin, S.E.S.** and Watson, D.A., *Philadelphia Organic Chemists' Club,* Philadelphia, April, 2013.
5. **Martin, S.E.S.** and Watson, D.A., *13th Annual ACS-Philadelphia Section and Younger Chemists Committee Student Poster Session*, Philadelphia, February 2013. – Winning Poster
6. **Martin, S.E.S.**; McAtee, J.R.; Ahneman, D.T.; Johnson, K.A.; Watson, D.A., *244th ACS National Meeting & Exposition*, Philadelphia, August 2012.

7. McAtee, J.R.; **Martin, S.E.S**.; Ahneman, D.T.; Johnson, K.A.; Watson, D.A., *5th Annual Frontiers at the Chemistry-Biology Interface Symposium*, Philadelphia, April 2012.
8. McAtee, J.R.; **Martin, S.E.S.**; Ahneman, D.T.; Johnson, K.A.; Watson, D.A., *CCST Research Review*, University of Delaware, October 2011.
9. McAtee, J.R.; **Martin, S.E.S.**; Ahneman, D.T.; Johnson, K.A.; Watson, D.A., *Frontiers in Catalysis Symposium*, University of Delaware, May 2011.
10. **Schwanger, S.E.**; Peelen, T.J., *11th Annual Undergraduate Research Symposium*, University of Maryland, Baltimore County, October 2008. – 1st Place

Funding

8/1/18-8/1/20	$46,000 Startup Funding, College of Wooster
2/7/19-12/31/19	$26,100 *Design and Assessment of Gingipain Inhibitors*, funded through Sherman-Fairchild Grant to The College of Wooster
2/20/19-6/30/20	$1655 William H. Wilson Fund grant, College of Wooster
3/27/19-6/30/20	$2050 award from Hamburger Endowment for Collaborative Projects and Program Development

Professional Affiliations/Certifications

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

Conferences/Symposia/Workshops

August 2019	New Faculty Workshop, American Chemical Society, Washington, D.C.
June 2019	46th National Organic Chemistry Symposium, Bloomington, Indiana
August 2017	254th 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, 47th Meeting
June 2013	43rd National Organic Chemistry Symposium, Seattle
August 2012	244th ACS National Meeting & Exposition, Philadelphia
April 2012	5th 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, 44th Meeting

External Thesis Committee Service

2019	Cole Meier, Chemistry, Kenyon College, external honors examiner

Internal Thesis Committee Service

2019	Samantha Adusumilli, Chemistry, College of Wooster, Second reader
	Russell Boston III, BCMB, College of Wooster, First reader
	Brittany Bowman, Chemistry, College of Wooster, Second reader
	Caylee Cunningham, BCMB, College of Wooster, Second reader
	Ian Mundy, Chemistry, College of Wooster, First reader
	Sarah Pitell, BCMB, College of Wooster, Second reader
	Noelle Sadallah, BCMB, College of Wooster, First reader
	Rada Zunich, Chemistry, College of Wooster, First reader