September 2022

Curriculum Vitae

Jamie Ludwig

jll449@drexel.edu

Assistant Teaching Professor
Drexel University
Philadelphia, PA 19104

Education:

Ph.D. Chemistry (May 2008-May 2013)
University of Texas, Southwestern Medical Center — Dallas, TX
Welch Fellow. Department of Biochemistry.

.

ACS Certified B.A., Chemistry (May 2008)
Illinois Wesleyan University — Bloomington, IL

Positions Held:

Assistant Teaching Professor, Department of Chemistry
Drexel University, 2021-present — Philadelphia, PA

Assistant Professor II, Department of Chemistry, Biochemistry and Physics
Rider University. 2015-2020 — Lawrenceville, NJ

Smartwork Online Homework, Rekeying
W.W. Norton & Company 2017-2018 — Remote, Online

Adjunct Professor, Liberal and Professional Studies
University of Pennsylvania 2017 — Pennsylvania

Visiting Assistant Professor, Department of Chemistry
Elon University August 2014-May2015 — Elon, NC

Postdoctoral Research Assistant
Laboratory of Dr. Jeffrey Johnson
UNC- Chapel Hill — Chapel Hill, NC

Teaching and Advising:

Courses taught:
Drexel University,

Organic Chemistry I (CHEM241)	2021-present
Organic Chemistry Lab (CHEM244)	2021-present
Organic Chemistry I (CHEM242)	2021-present
Organic Chemistry II Lab (CHEM 245)	2022

Supplemental Chemistry Lab (CHEM T280)	2022
General Chemistry I (CHEM111)	2021-2022

Rider University

Instructor, Biochemistry I (BCH325)	Fall 2015- 2019
Instructor, Biochemistry and Enzymology I Lab (BCH 326)	Fall 2015- 2019
Instructor, Organic I (CHE 211)	Fall 2016-2020
Instructor, Organic II (CHE 214)	Spring 2016-2020
Instructor, Organic I Lab (CHE 211L)	Fall 2016-2020
Instructor, Organic II Lab (CHE 214L)	Spring 2016-2020
Instructor, Introductory Chemistry (CHE100)	Spring 2016
Instructor, Medicinal Chemistry (BCH 425)	Spring 2018
Instructor, Chemistry in the Kitchen (CHE 114 + L)	Spring 2019

Elon University

Instructor, Organic II (CHE212)	Spring 2015
Instructor, General Chemistry II Lab (CHE112L)	Spring 2015
Instructor Biochemistry I Lab (CHE351L)	Fall 2014
Instructor, Organic I (CHE211)	Fall 2014
Instructor General Chemistry I Lab (CHE111L)	Fall 2014

UNC, Chapel Hill

Instructor, Organic Chemistry SEP	Summer 2014

UT Southwestern

Instructor, Organic Chemistry SPOC	Summer 2010

Service Activities:

University Level:

GRFP Review Fall 2021

Read and evaluate student proposals for NSF Graduate Research Fellowship

New Dragons Faculty Learning Community 2021-2022

Completed year-long training for new Drexel faculty covering teaching and service obligations and opportunities as well as best-practiced for teaching an increasingly diverse cohort.

Dragons Prep Instructor Summer 2021, 2022

Taught CHEM111 to students within Dragons Prep Program

Department Level:

Awards Committee	Winter 2021-present
Chair	Fall 2021-present

Organize and distribute awards for chemistry department undergraduate and graduate students. Plan and host end-of-year awards ceremony.

Scholarly Activity:

New Reaction Discovery Through Biocatalysis
Rider University Lawrenceville, NJ
Research focuses on the discovery of new biocatalyzed reactions through labeling approaches.
(2015- present)

Development of a dynamic kinetic resolution reaction for the synthesis of α-substituted-β-keto esters
University of North Carolina at Chapel Hill Chapel Hill, NC
Advisor: Jeffrey Johnson, PhD
Utilizing both biocatalysis and small molecule catalyst systems, a DKR reaction towards the synthesis of α-substituted-β-keto ester was explored. In this dynamic process, two contiguous stereocenters were set in a single synthetic step.
(2013-2014)

Natural product inspired approaches to new drug discovery and new synthetic design.
UTSW Department of Biochemistry Dallas, TX
Advisor: John B. MacMillan, PhD
Developing and executing a new platform for the discovery of new, biocatalyzed organic transformations. Screening an extensive library of marine-derived bacteria against exogenous substrates to identify unique organic transformations and optimize these new reactions.
(2008-2013)

Green Chemistry Approaches to New Synthesis Development
Illinois Wesleyan University Bloomington, IL
Advisor: Ram S. Mohan, PhD
Utilized bismuth compounds as catalysts to develop new methodology in organic synthesis. Bismuth compounds are well known to have relatively low toxicity relative to other heavy metal containing compounds. This allows for development of powerful reactivity on a "green chemistry" platform.
(2006-2008)

Web based work:

Ludwig, Jamie. Basser Center, Young Investigator Awards, Biographies. June 2022.

General Chemistry and Organic Chemistry Lecture Series, a set of videos and problem sets available online through Study.com. Completed in Summer 2022.

Ludwig, Jamie and Sarah Kremer. "Basser Young Leadership Council, Interview with Dr. Ben Black, PhD" October 28, 2020. Video.

Ludwig, Jamie. "Organically gaining synthetic experience". Teaching the Mechanism. 21 Sept 2017. https://teachthemechanism.com/2017/09/.

Publications:

Nguyen Y., Nguyen N. X., **Rogers J. L.**, Liao J, MacMillan JB, Jiang Y, Sperandio V. 2015. *mBio* **2015**, *6*. "Structural and mechanistic roles of novel chemical ligands on the SdiA quorum-sensing transcription regulator."

Rogers, J. L., Bayeh, L., Scheuermann, T., Longgood, J., Caldwell, C., Key, J., Naidoo, J., Melito, L, Shokri, C., Frantz, D., Bruick, R., Gardner, K., MacMillan, J., Tambar, U., *J. Med. Chem.* **2013**, *56*, 1739. "Development of inhibitors of the PAS-B domain of the HIF-2α transcription factor."

Rogers, J. L., MacMillan, J. B., *J. Am. Chem. Soc.* **2012**, *134*, 12378. "A labeled substrate approach to discovery of biocatalytic reactions: A proof of concept transformation with *N*-methylindole."

Rogers, J.L., Ernat, J.E., Yung, H., Mohan, R.S. *Catalysis Communications*, **2009**, *10*, 625. "Environmentally friendly organic synthesis using bismuth compounds. Bismuth (III) bromide catalyzed synthesis of substituted tetrahydroquinoline derivatives."

Christensen, J.E., Huddle, M.G., **Rogers, J.L**, Yung, H., Mohan, R.S., *J. Chem. Ed, **2008**, 85,* 1274. "The discovery–oriented approach to organic chemistry. 7. Rearrangement of trans-stilbene oxide with bismuth trifluoromethanesulfonate and other metal triflates. A microscale green organic chemistry laboratory experiment."

Presentations:
Undergraduate students noted with underline.

Marin, J. Ludwig, J.L. "Optimization of carbon-13 labeling strategies for new biocatalysis discovery" 256th National ACS Meeting, Organic Division. Boston, MA (August 19-23 2018).

Szwetkewski, C., Bentz, S., Ludwig, J.L. "Development of isotope labeling strategies for the discovery of new biocatalyzed reactions" 252nd National ACS Meeting, Organic Division. Philadelphia, PA (August 21-25, 2016)

Ludwig, J. L. "Biocatalyzed Organic Transformations: A Platform for New Reaction Discovery" Gordon Conference, Natural Products, Bryant University, Smithfield, RI (July 26, 2011)

Ludwig, J. L. , Yung, H., Mohan, R. S. "Bismuth Compounds in Organic Synthesis: Bismuth Bromide Catalyzed Synthesis of Substituted Quinolines" 233rd National ACS Meeting, Organic Division. Chicago, Il, (March 25-29, 2008)

Ludwig, J. L., Mohan, R. S. "Bismuth Compounds in Organic Synthesis: Bismuth Bromide Catalyzed Synthesis of Substituted Quinolines" CUR National Meeting. Washington, DC, (April 2008)

Invited Talks

"Selective Biocatalyzed Oxidations" Illinois Wesleyan University
March 16, 2021

"Bacteria: The Original Organic Chemists" University of Southern Mississippi Department of Chemistry and Biochemistry Seminar Series, November 16, 2018.

Grants, Fellowships and Research Awards

Pfizer PURE grant, "Women in Science Endeavors (WISE): Exploring Professional Pathways and Research" $4600, **2020**
ABRCMS Travel Grant, $1250; **2019**
Pfizer PURE grant, "Pfizer Independent Scholarship and Research Project" $5000; **2019**
Society and Science, Advocate Grant; $6000; **2017-2019**

Professional Affiliations:

American Chemical Society	2007-present
Director, Trenton area local section	2016- 2020
Alternate Councilor, Trenton area local section	2018- 2019
Basser Center, Young Leadership Council	2016-present
Co-Chair; Science Group	2019-present

Local Scientific Outreach and Education:

National American Chemical Society — National

I served as a faculty reviewer for student chapter end-of-year reports. In this role, I read through entire reports including financial reports. I provided scores and feedback to student chapters across the country.

Trenton Area American Chemical Society — Trenton, NJ

I serve as Director for the local chapter of the American Chemical Society. In this role, I have served to proctor the local Chemistry Olympiad for local high school students. I served on a scholarship committee that selected students for various scholarships

provided through our chapter. I have also helped to organize a variety of events for the group.

Rider University, Project SEED Coordinator Lawrenceville, NJ

I serve as the coordinator for our Project SEED program. We invite three students to campus each summer to work in research labs with faculty on campus. My role includes outreach to local high schools to recruit applicants, selecting students for the fellowship positions, and coordinating the summer activities.