
Philipp Michael Gemmel

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PROFESSIONAL EXPERIENCE

Assistant Professor of Chemistry

Trinity College, Hartford, CT

July 2025–present

EDUCATION

The University of Chicago, Chicago, IL

Ph. D. in Chemistry, *Advisor:* Professor Scott A. Snyder

July 2017–December 2022

M.S. in Chemistry

December 2018

Grinnell College, Grinnell, IA

B.A. in Chemistry and Political Science

August 2013–May 2017

RESEARCH EXPERIENCE

Research Fellow to Professor Alison R. H. Narayan, PhD

University of Michigan, Ann Arbor, MI

February 2023–February 2025

- Characterize biosynthetic enzymes of a complex marine natural product and synthesize putative biosynthetic intermediates
- Build a comprehensive substrate scope for a promiscuous indole oxidation biocatalyst and elucidate the structural origins of enantioselectivity, mentoring one graduate and two undergraduate students

Graduate Research Assistant to Professor Scott A. Snyder, PhD

The University of Chicago, Chicago, IL

July 2017–December 2022

- Designed and carried out synthetic studies toward the total synthesis of structurally complex indole alkaloid natural products and develop novel asymmetric heteroaromatic cycloaddition reactions
- Collaborated within and led a research team in the concise total synthesis of a diterpene natural product family, mentoring one graduate and three undergraduate student researchers

Lando/NSF Summer Undergraduate Research Fellow to Professor Christopher J. Douglas, PhD

University of Minnesota–Twin Cities, Minneapolis, MN

June 2016–August 2016

- Expanded the substrate scope of an Iridium-catalyzed Acyl C–O/Aryl C–H activation as part of the summer Lando/NSF REU program

Undergraduate Research Assistant to Professor Kathryn M. Jacobson, PhD

Grinnell College, Grinnell, IA

May 2014–May 2015

- Designed and executed experiments on fungal growth patterns and decomposition of plant litter under extreme thermal cycling conditions
- Investigated the thermal ranges of newly discovered fungal species from the Namib as a baseline study for future research on plant litter decomposition in hyper-arid ecosystems

TEACHING EXPERIENCE

Assistant Director of Collaborative Learning in Chemistry Programs

The University of Chicago, Chicago, IL

March 2022–June 2022

- Supervised three graduate TAs and eight undergraduate team leaders for the Collaborative Learning Programs in General and Organic Chemistry with more than 100 enrolled students

- Led weekly pedagogy workshops to improve workshop facilitation strategies for Collaborative Learning workshops

Otto H. & Valerie Windt Memorial TA Training Teaching Fellow

The University of Chicago, Chicago, IL

July 2021–May 2022

- Moderated a recurring Senior TA panel for incoming first year graduate students in preparation for their TA duties
- Created and led quarterly 1-hour teaching modules for first year cohort on teaching topics such as effective lesson planning, implicit bias, and presentation skills

Collaborative Learning in Organic Chemistry Graduate Teaching Assistant

The University of Chicago, Chicago, IL

April 2019–December 2021

- Trained and supervised a team of undergraduate team leaders that facilitate collaborative learning workshops
- Developed a comprehensive practice problem bank geared at the collaborative learning program for undergraduate students in organic chemistry
- Co-organized the Collaborative Learning program's rapid transition to remote learning

Graduate Teaching Assistant in Organic Chemistry

The University of Chicago, Chicago, IL

September 2017–April 2019

- Taught a section of 13 to 15 students in Organic Chemistry for four quarters, including a weekly laboratory and discussion section and to improve students' learning through a variety of practice problems
- Mentored four student groups in a ten-week independent synthesis project, including literature search, proposals, a poster presentation and a research paper, as part of the Honors program

Science Learning Center Mentor for Organic Chemistry and Introduction to Biological Inquiry

Grinnell College, Grinnell, IA

August 2015–May 2017

- Facilitated two weekly mentor sessions for 30 students of Organic Chemistry I and II in order to review material and enhance learning through challenging practice problems
- Coordinated with Science Learning Center to improve the overall learning experience for the students

MENTORSHIP

University of Michigan

Jolie Kan, graduate student rotator, Jan. 2024–Apr. 2024

Ryan Russo, graduate student rotator, Aug. 2023–Oct. 2023

William Aye, undergraduate student, Oct. 2023–Feb. 2025

George Amoako, undergraduate Perrigo Fellow, Jun. 2023–Aug. 2023, now Clinical Research Associate at UMass Chan Medical School, Worcester, MA

The University of Chicago

Sohee Kim, graduate student, Jan. 2021–Dec. 2022

Justin Bossenbroek, undergraduate student, Apr. 2021–Dec. 2022, now graduate student at UCLA (Advisor: Soumitra Athavale), Los Angeles, CA

Noel Cercizi, undergraduate student, May 2022–Dec. 2022, now MD/PhD student at Albert Einstein School of Medicine, New York, NY

Lindsay Jay, undergraduate student, Oct. 2017–Jun. 2018, now Associate at Qral Ventures, Chicago, IL

PUBLICATIONS AND MANUSCRIPTS

Gemmel, P. M.*; Kim, S. H.*; Zhou, Z.; Bossenbroek, J. R.; Snyder, S. A. Divergent Total Synthesis of the Harziane Diterpene Natural Product Family, *Manuscript in preparation*.

Cole, C. J. F.; Gemmel, P. M.; Snyder, S. A. Diels–Alder Reactions of 2-Pyrones. *Organic Reactions, Manuscript in preparation*.

Wang, Y.; Das, S.; Aboulhosn, K., Champagne, S. E.; Gemmel, P. M.; Skinner, K. C.; Ragsdale, S. W.; Zimmerman, P. M.; Narayan, A. R. H. Nature-inspired radical pyridoxal-mediated C–C bond formation, *J. Am. Chem. Soc.* **2024**, *146*, 23321-23329.

Champagne, S. E.; Chang, C.-H.; Gemmel, P. M.; Brooks, C. L., III; Narayan, A. R. H. Stereoselective biocatalytic oxidation of 2-arylindoles. *J. Am. Chem. Soc.* **2024**, doi.org/10.1021/jacs.3c12393

Gemmel, P. M.; Goetz, M. K.; James, N. M.; Jesse, K. A.; Ratliff, B. J. Collaborative Learning in Chemistry: Impact of COVID-19. *J. Chem. Ed.*, **2020**, *97*, 2899-2904.

Serratore, N. A.; Anderson, C. B.; Underwood, S. J.; Frost, G. B.; Hoang, G.-T.; Gemmel, P. M.; Hardy, M. A.; Douglas, C. J. Metal-Catalyzed C–H and C–O Functionalization to Achieve Sterically Controlled Regioselectivity in Arene Acylation. *J. Am. Chem. Soc.* **2018**, *140*, 10025-10033.

Jacobson, K.; van Diepeningen, A.; Evans, S.; Fritts, R.; Gemmel P.; Marsho, C.; Seely, M.; Wenndt, A.; Yang, X.; Jacobson, P. Non-Rainfall Moisture Activates Fungal Decomposition of Surface Litter in the Namib Sand Sea. *PLoS ONE*. **2015**, *10*: e0126977.

**denotes equal contribution*

PRESENTATIONS

Gemmel, P. M. “Natural Product Synthesis—Two Perspectives, One Goal” (Seminar) 09/10/2024, Hope College, Holland, MI.

Champagne, S. E.; Gemmel, P. M.; Chiang, C.-H.; Amoako, G. G.; Narayan, A. R. H. “Development of an Enzymatic Asymmetric Oxidation of 2-Arylindoles” (Poster) 09/16/2023, Midwest Enzyme Chemistry Conference, Evanston, IL.

Gemmel, P. M.; Champagne, S. E.; Chiang, C.-H.; Amoako, G. G.; Narayan, A. R. H. “Development of an Enzymatic Asymmetric Oxidation of 2-Arylindoles” (Poster) 07/31/2023, Gordon Research Conference Natural Products and Bioactive Compounds, Andover, NH.

Gemmel, P. M.; Anderson, C. B.; Serratore, N. A.; Underwood, S. J.; Douglas, C. J. “Substrate Scope Study in Tandem Acyl C–O/Aryl C–H Activation.” (Poster) 04/02/2017, ACS 253rd National Meeting, San Francisco, CA.

AWARDS

RCSA Fellow

Research Corporation for Science Advancement, Tucson, AZ

March 2024

Joan Shiu Award for Student Service

The University of Chicago, Chicago, IL

May 2022

Gerhard Closs Teaching Award in Organic Chemistry

The University of Chicago, Chicago, IL

June 2020

American Chemical Society Division of Organic Chemistry Undergraduate Award

Grinnell College, Grinnell, IA

May 2017

Young W. Kihl '59 Award in Political Science

Grinnell College, Grinnell, IA

May 2017

PEDAGOGY COURSES

Course Design and College Teaching

The University of Chicago, Chicago, IL

Spring 2020

The Inclusive STEM Teaching Project

BUx (online course offered by Boston University)

Summer 2021

SELECTED LEADERSHIP EXPERIENCE**Department of Chemistry Director of Graduate Student Initiatives**

The University of Chicago, Chicago, IL

July 2020–July 2021

- Organized virtual and socially distant department-wide community-building and events and first-year targeted programs aimed at graduate student retention
- Initiated departmental climate survey to help better serve the department community during the Covid-19 pandemic

Provost's Student Accessibility Advisory Board

The University of Chicago, Chicago, IL

July 2020–May 2022

- Identified ways in which the University can improve the availability and visibility of resources and programs of the Office of Access and Equity and Student Disability Services

Graduate Committee on Educational and Teaching Matters

The University of Chicago, Chicago, IL

September 2018–July 2019

- Discussed improvements to the Department of Chemistry's graduate and undergraduate curricula
- Contributed to overhaul of the Organic Chemistry laboratory course in cooperation with the lab director

Political Science Student Educational Policy Committee Member

Grinnell College, Grinnell, IA

April 2015–May 2017

- Spearheaded and ran the biweekly Political Lives talk series in which distinguished college faculty, staff, and community members share their life-long involvement in politics
- Contributed the student portion for tenure-reviews of faculty members and interviewed new faculty candidates