Thomas Montgomery, PhD

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https://www.ncbi.nlm.nih.gov/myncbi/thomas.montgomery.1/bibliography/public/

I. Professional Preparation and Experience

Ph.D. Organic Chemistry	The University of Chicago	December 2015
M.S. Organic Chemistry	The University of Chicago	June 2011
B.A. Chemistry and Biology	St. Mary's College of Maryland	June 2010

B. Work History

Assistant Professor	Duquesne University	2018 – Present
Postdoctoral Fellow	The University of Pennsylvania	2016 – 2018
Research Assistant	The University of Chicago	2011 – 2015
Teaching Assistant	The University of Chicago	2010 – 2011

C. Honors and Awards

The Presidential Award for Excellence in Teaching	2024
The School of Science and Engineering Award for Excellence in Teaching	2024

D. Memberships in Professional Organizations

American Chemical Society	2013 – Present

II. Teaching

A. Graduate Courses Taught

CHEM 503: Advanced Organic Chemistry	3 credits	Fall 2018-2021, 2023
CHEM 511: Foundations in Chemistry	1-6 credits	Summer 2018-2025
CHEM 523: Organic Total Synthesis	3 credits	Fall 2022, 2024
CHEM 695: Original Research Proposal	0 credits	Fall 2021
CHEM 518: Research Experience II	1-6 credits	Spring 2021
CHEM 516: Research Experience I	1-6 credits	Fall 2019, Fall 2024

B. Undergraduate Courses Taught

CHEM 229: Reactions, Synthesis and Spectroscopy	4 credits	Spring 2020-2025
CHEM 229L: Organic Synthesis Laboratory	1 credit	Spring 2020-2025
CHEM 153: Career Opportunities in the Chemical and Biochemical Sciences	1 credit	Spring 2022, Fall 2023-2024

C. Academic Advisement or Supervision

1. Dissertation committees chaired

Alex Cocolas – PhD Chemistry	July 2024
Sarah Hejnosz – PhD Chemistry	July 2023

2. Thesis committees chaired

Katie Kaczynski – MS Chemistry	April 2022

3. Dissertation committees as a member

Christian Knox – PhD Chemistry	October 2024 – Present
Ashley Banks – PhD Chemistry	September 2024 – Present
Derek Bedillion – PhD Chemistry	September 2024 – Present
Ben Clegg – PhD Chemistry	June 2020 – Present
Luke Jesikiewicz – PhD Chemistry	August 2022 – September 2024
Jordan Kelly – PhD Chemistry	June 2019 – March 2024
Mark Recznic – PhD Chemistry	September 2018 – July 2022

*4. Number of undergraduate thesis advisees (8). *Honors Thesis*

Tyler Kiss – BS Biochemistry*	April 2025
Liam Sweeney – BS Chemistry	April 2025
Benjamin Musiak – BS Chemistry	April 2024
Anna Witte – BS Chemistry*	December 2023
Serina Tressler – BS Chemistry*	April 2023
Lindsay Moskal – BS Chemistry*	April 2023
Lindsey Ocheltree – BS Chemistry	April 2022
Marianne Hanna – BS Chemistry*	April 2021

5. Number of graduate, undergraduate mentees. 12 graduate and 32 undergraduate

Graduate Students	
Elizabeth Colecchia – PhD	2025 – Present
Malavika Satheesan – PhD	2024 – Present
Emily Vargo – PhD	2024 – Present
Eric Chartier – PhD	2023 – Present
Nick Frankos – PhD	2023 – Present
Aiden Lane – PhD	2012 – Present
Martin Neal – PhD	2019 – Present
Alex Cocolas – PhD	2019 – 2024
Jordan Kelly – PhD	2022 – 2024
Sarah Hejnosz – PhD	2018 – 2023
Malavika Satheesan – MS	2022 – 2023
Danielle Beres – MS	2022 – 2023
Katie Kazynski – MS	2020 – 2022
Undergraduate Students – Duquesne University	
Kayla Pugliese	2025 – Present
Abbigail Black	2024 – Present
Megan Glista	2023 – Present
Kiera Luca	2023 – Present
Alayna Funke	2023 – Present
Josh Graber	2023 – Present
Liam Sweeney	2023 – 2025
Tyler Kiss	2022 – 2025
Benjamin Musiak	2022 – 2024
Anna Witte	2022 – 2023

Serina Tressler	2020 – 2023
Lindsay Moskal	2020 – 2023
Hannah Gorman	2021 – 2022
Lindsey Ocheltree	2019 – 2022
Aley Paige	2018 – 2019
Marianne Hanna	2018 – 2021
Undergraduate Students – Other Universities	
Quentin Bullard – St. Mary's College of Maryland	2025 – 2025
Ruby DePalma – Seton Hill University	2025 – 2025
Cameron Heinig – St. Bonaventure College	2025 – 2025
Haley Roche – St. Mary's College of Maryland	2024 – 2024
Nora Ozimek – Seton Hill University	2024 – 2024
Shaheera Jafri – St. Mary's College of Maryland	2023 – 2023
Kristiana Kasper – Baylor University	2023 – 2023
Luke Forrester – Franciscan University at Steubenville	2023 – 2023
Eric Chartier – Franciscan University at Steubenville	2021 – 2022
Joseph Rohde – Franciscan University at Steubenville	2022 – 2022
Victoria Unnerstall – Franciscan University at Steubenville	2022 – 2022
Sierra Brandts – Sewanee: The University of the South	2022 – 2022
Austin Burns – St. Mary's College of Maryland	2021 – 2022
Sara Marquis – St. Mary's College of Maryland	2021 – 2022
Jasper Shide – St. Mary's College of Maryland	2020 – 2022
Ny Luong – St. Mary's College of Maryland	2021 – 2022
Nya Gayluak – Vanderbilt University	2021 – 2021
Michael Sobus – Franciscan University at Steubenville	2020 – 2020
Emily Krinos – Westminster College	2019 – 2019
Naomi Coutinho – University of Cincinati	2019 – 2019
Scott Brody – St. Mary's College of Maryland	2019 – 2019
High School Students – Imani Christian Academy	
Torress Hatten Jr.	2022 – 2022
Imani Miles	2021 – 2021

D. Publications Pertaining to Teaching Activities

Montgomery,* T. D.; Green, B. M.; Olich C. G.; Evanseck, J. D. *Journal of Postsecondary Education and Disability* **2024**, 37, *1*, 73-79.

Montgomery,* T. D.; Buchbinder, J. R.; Gawalt, E. S.; Iuliucci, J.; Koch, A. S.; Kotsikorous, E.; Lackey, P. E.; Lim, M. S.; Rohde, J. J.; Rupprecht, A. J.; Srnec, M. N.; Vernier, B.; Evanseck,* J. D. *Journal of Chemical Education* **2022**, 99, *6*, 2338-2350. https://doi.org/10.1021/acs.jchemed.2c00113

E. Grants/Funding for Teaching Activities

National Science Foundation (NSF): Integration of Chemical Theory, Computation and Experiments at Duquesne University. Funds Requested: $400,000. Role: co-PI, *Status: Funded for $390,000.* Award Number: 2244151.

III. Scholarship

A. Scholarly Publications: https://orcid.org/0000-0002-6526-8564

1. Articles presenting original work published or accepted for publication in scholarly journals

a. Neal, M. J.; Chartier, E. J.; Lane, A. M.; Hejnosz, S. L.; Jesikiewicz, L. T.; Lui, P.; Rohde, J. J.; Lummis, P.; Fox, D. J.; Evanseck,* J. D.; Montgomery,* T. D. "N-Oxide Insertion into LDA Dimeric Aggregates for Azomethine Ylide Formation: Explicit Solvation in Quantum Mechanical Treatment of Polarized Intermediates" *Journal of Organic Chemistry* **2025**, *10*, 3673-3683. – Highlighted as an alternative cover to the journal.

b. Cocolas, A. H.; Lane, A. M.; Musiak, B. S.; Chartier, E. J.; Bedillion, D. A.; Hejnosz, S. L.; Rohde, J. J.; Lummis, P. A.; Evanseck, J. D.; Montgomery,* T. D. "Diastereoselective [3 + 2] Cycloaddition between Tertiary Amine N-Oxides and Substituted Alkenes to Access 7-Azanorbornanes" *Organic Letters* **2024**, *26*, 6546-6550.

c. Montgomery,* T. D.; Green, B. M.; Olich C. G.; Evanseck, J. D. "Learning from a Pandemic: Redesigning with Universal Design for Learning to Enhance Scientific Skills" *Journal of Postsecondary Education and Disability* **2024**, 37, *1*, 73-79.

d. Hejnosz, S. L.; Beres, D. R.; Cocolas, A. H.; Neal, M. J.; Musiak, B. S.; Hanna, M. M. B.; Bloomfield, A. J.; Montgomery,* T. D. "[3 + 2] Cycloadditions of Tertiary Amine N-Oxides and Silyl Imines as an Innovative Route to 1,2-Diamines" *Organic Letters* **2023**, *25*, 4638-4643. -Highlighted in Synthesis Workshop https://www.youtube.com/watch?v=rtPbn48kvAI

e. Lane, A. M.; Luong, Ny, T. C.; Kelly, J. C.; Neal, M. J.; Jamrom, J.; Bloomfield, A. J.' Lummis, P. A.; Montgomery,* T. D.; Chase,* D. T. "Synthetic Exploration of Bis(phenolate) Aza-BODIPYs and Heavier Group 13 Chelates" *Molecules* **2022**, *27*, 8256.

f. Montgomery,* T. D.; Buchbinder, J. R.; Gawalt, E. S.; Iuliucci, R. J.; Koch, A. S.; Kotsikorou, E.; Lackey, P. E.; Lim, M. S.; Rohde, J. J.; Rupprecht, A. J.; Srnec, M. N.; Vernier, B.; Evanseck,* J. D., "The Scientific Method as a Scaffold to Enhance Communication Skills in Chemistry" *Journal of Chemical Education* **2022**, *99*, 2338-2350.

g. Zarcone, S. R.; Yarbrough, H. J.; Neal, M. J.; Kelly, J. C.; Kaczynski, K. L.; Bloomfield, A. J.; Bowers, G. M.; Montgomery, T. D.; Chase,* D. T. "Synthesis and Photophysical Properties of Nitrated aza-BODIPYs" *New Journal of Chemistry* **2022**, *46*, 4483-4496.

h. Neal, M. J.; Hejnosz, S. L.; Rohde, J. J.; Evanseck, J. D.; Montgomery,* T. D. "Multi-Ion Bridged Pathway of *N*-Oxides to 1,3-Dipole Dilithium Oxide Complexes" *Journal of Organic Chemistry* **2021**, *86*, 11502-11518.

i. Montgomery, T. D.; Smith,* A. B. III "α-Silyl Amides: Effective Bifunctional Lynchpins for Type I Anion Relay Chemistry" *Organic Letters* **2017**, *22*, 6216-6219.

j. Rombola, M.; Sumaria, C. S.; Montgomery, T. D.; Rawal,* V. H. "Development of Chiral, Bifunctional Thiosquaramides: Enantioselective Michael Additions of Barbituric Acids to Nitroalkenes" *Journal of the American Chemical Society* **2017**, *139,* 5297-5300.

k. Montgomery, T. D.; Rawal,* V. H. "Palladium-Catalyzed Modular Synthesis of Substituted Piperazines and Related Nitrogen Heterocycles" *Organic Letters* **2016**, *18*, 740-743. -Selected for Synfacts Highlights: *Synfacts* **2016**, *12*, 342.

l. Nibbs, A. E.; Montgomery, T. D.; Zhu, Y.; Rawal,* V. H. "Access to Spirocyclized Oxindoles and Indolenines via Palladium-Catalyzed Cascade Reactions of Propargyl Carbonates with 2-Oxotryptamines and Tryptamines." *Journal of Organic Chemistry* **2015**, *80*, 4928-4941.

m. Montgomery, T. D.; Nibbs, A. E.; Zhu, Y.; Rawal,* V. H. "Rapid Access to Spirocyclized Indolenines via Palladium-Catalyzed Cascade Reactions of Tryptamine Derivitives and Propargyl Carbonate." *Organic Letters* **2014**, *16*, 3480-3483.

n. Montgomery, T. D.; Ye, Z.; Kagawa, N.; Rawal,* V. H. "Palladium-Catalyzed Decarboxylative Allylation and Benzylation of *N*-Alloc and *N*-Cbz Indoles." *Organic Letters* **2013**, *15*, 1140-1143.

o. Prakash, G. K. S.; Shao, N.; Wang, F.; Ni,* C. (Checkers: Montgomery, T. D., Rawal, V. H.) "Preparation of α-Fluororbis(phenylsulfonyl)methane (FBSM) *Organic Syntheses* **2013**, *90*, 130-144.

2. Invited articles published or accepted for publication in scholarly journals

B. Grants Awarded

1. Grants where I am the PI (Principal Investigator) of co-PI (co-Principal Investigator)

a. Charles Henry Leach II Grant: Expanding the Scope of Aza-Dipyrromethene Near Infra-Red Dyes for Medical Applications: $23,000. Role: PI, *Status: Funded for $23,000.* 2025-2026.

b. National Institutes of Health (NIH): Application of N-Oxides for the Synthesis of Nitrogen Heterocycles. Funds Requested: $406,457. Role: PI, *Status: Funded for $406,457*. Award Number: 1R15GM148917-01. 2022-2025.

c. National Science Foundation (NSF): Integration of Chemical Theory, Computation and Experiments at Duquesne University. Role: co-PI*. Funds Awarded: $390,000*. 2023-2026.

d. Charles Henry Leach II Grant: A Novel Approach to Pyrollidines, Important Steps to Epibatidine through Community Outreach. Funds Requested: $22,612. Role: PI, *Status: Funded for $22,500*. 2021-2022.

e. CETR: Chemistry Internship for Underserved Local High School Minority Students. Funds Requested: $2,197.50, Role: PI, *Status: Funded for $2,198* 2020-2021.

f. Faculty Development Fund: Synthesis of Chrysosporazine D&E: Reversing Multidrug Resistance in Cancer Cells. Funds Requested: $8,775. Role: PI, *Status: Funded for $3,850.* 2021-2023.

2. Grants where I am not the PI

a. National Science Foundation (NSF): Integration of Chemical Theory, Computation and Experiments at Duquesne University. Role: Senior Investigator and Experimental Director. Funds Awarded: $390,000. 2020-2023

C. Scholarly Presentations

1. 2025 – “N-Oxides as Versatile Reagents for Synthesis” Invited seminar at St. Louis University, St. Louis MO – 4/25/2025 – regional
2. 2025 – “Generation of N-heterocycles through application of tertiary amine N-oxides” Competitive submission for the American Chemical Society National Meeting, San Diego PA – 3/26/2025 – international
3. 2025 – “N-Oxides as Versatile Reagents for Synthesis” Invited seminar at Loyola University Chicago, Chicago IL – 2/21/2025 – regional
4. 2025 - “N-Oxides as Versatile Reagents for Synthesis” Invited seminar at DePaul University Chicago, Chicago IL – 2/20/2025 – regional
5. 2024 – “Adapting cyclic and non-cyclic N-oxides for use in cycloadditions” Competitive submission for the American Chemical Society Regional Meeting, Pittsburgh PA – 11/8/2024 – regional
6. 2024 - N-Oxides as Versatile Reagents for Synthesis” Invited seminar at Haverford University, Pittsburgh PA – 10/4/2024 – regional
7. 2024 – “N-Oxides as Versatile Reagents for Synthesis” Invited seminar at The University of Pittsburgh, Pittsburgh PA – 9/17/2024 – regional
8. 2024 – “Directed Synthesis of Substituted Azanorbornanes” Competitive submission for the American Chemical Society National Meeting, New Orleans LA – 3/17/2024 – international
9. 2024 – “Improving Undergraduate Communication Skills Through Research Based Learning” Competitive submission for the American Chemical Society National Meeting, New Orleans LA – 3/17/2024 – international
10. 2023 – “From N-Oxides to Diamines: A Serendipitous Journey” Invited seminar at Franciscan University at Steubenville, Steubenville OH – 11/3/2023 – regional
11. 2023 – “From N-Oxides to Diamines: A Serendipitous Journey” Invited seminar at Susquehanna University, Selinsgrove PA – 10/6/2023 – regional
12. 2023 – “From N-Oxides to Diamines: A Serendipitous Journey” Invited seminar at Dickinson College, Carlisle PA – 9/12/2023 – regional
13. 2023 – “N-oxides as versatile building blocks for the synthesis of heterocycles” Competitive submission for the American Chemical Society National Meeting, Indianapolis IN – 3/23/2023 – international
14. 2022 – “How to Speak and Write Like a Chemist: Communication and the Scientific Method” Invited Keynote Speaker for MAALACT Symposium 11/11/22 – 11/12/22 – national
15. 2022 – “*N*-oxides as potent precursors for [3+2] cycloaddition reactions” Competitive submission for the American Chemical Society National Meeting, Chicago IL – 8/22/2022 – international

16. 2022 – “On the Road to Chrysosporazine D” Invited seminar by Phi Lambda Upsilon Chapter at Duquesne University, Pittsburgh PA – 5/16/2022 – regional
17. 2022 – “Chrysosporazines and Computations: Total Synthesis and Adapting to a Pandemic” Invited seminar at Temple University, Philadelphia PA – 4/7/2022 – regional
18. 2022 – “*N*-Oxides to Azomethine ylides: Mechanistic Insights” Competitive submission for the American Chemical Society National Meeting, San Diego PA – 3/21/2022 – international
19. 2021 – “Mechanistic Investigations into Azomethine Ylides” Competitive submission for the Great Lakes Regional Meeting of the American Chemical Society, Virtual – 6/8/2021 – regional
20. 2020 – “Azomethine Ylides and Research at Duquesne University” Invited seminar at Youngstown State University, Youngstown OH, 10/30/2020 – regional
21. 2019 – “Teaching an Old Dog New Tricks: Finding Better Solutions in Organic Chemistry” Invited seminar at Seton Hill University, Greensville PA, 11/8/2019 – regional. Invited seminar at Indiana University of Pennsylvania, Indiana PA, 11/1/2019 – regional
22. 2019 – “Serendipity: Adventures with Nickel” Invited keynote seminar by the American Chemical Society Duquesne Student Chapter, Pittsburgh PA, 4/13/2019 – regional
23. 2018 – “From Catalysis to Synthesis: Organic Chemistry at Duquesne University” Invited seminar School of Pharmacy, Duquesne University, Pittsburgh PA, 10/18/2018 – regional