

Curriculum Vitae
Andrew D. Steele

Florida International University
Assistant Professor
Department of Chemistry and Biochemistry

CP 311, 11200 SW 8th St, Miami, FL 33199
(305) 348-3121
anstele@fiu.edu

EDUCATION/EMPLOYMENT

Florida International University: Miami, FL Assistant Professor, Department of Chemistry and Biochemistry	2025 – present
UF Scripps: Jupiter, FL Postdoctoral Fellow, Postdoctoral Associate, Staff Scientist <i>Advisor:</i> Ben Shen, PhD	2018 – 2025
Emory University: Atlanta, GA Ph.D – Organic Chemistry <i>Advisor:</i> William M. Wuest, PhD	2017 – 2018
Temple University: Philadelphia, PA <i>Advisor:</i> William M. Wuest, PhD	2013 – 2017
Messiah College: Grantham, PA B.S. – Chemistry, Minor Mathematics	2010 – 2012

PUBLICATIONS (*These authors contributed equally)

22. Kiefer, A. F.; Thirugnanasambantham, P.; Jin, Y.; **Steele, A. D.**; Hwang, D.; Jiang, Y.; Adhikari, A.; Yang, D.; Chang, J.; Tafesse, R.; Rader, C.; Muthusamy, N.; Shen, B. "Second Generation Tiansimycin-Based Antibody-Drug Conjugates Enabled by Highly Efficient Semi-Synthetic Approach Specifically Targeting B-Cell Malignancies" *JACS Au* **2025**, 5, 3171.
21. **Steele, A. D.***; Meng, S.*; Li, G.*; Kalkreuter, E.; Chang, C.; Shen, B. "Structural Insights into the Mechanism of a Polyketide Synthase Thiocysteine Lyase Domain" *J. Am. Chem. Soc.* **2024**, 146, 32605.
20. **Steele, A. D.**; Jiang, H.; Pan, G.; Lim, S.-K.; Kalkreuter, E.; Kwong, T.; Ju, J.; Rajski, S.; Shen, B. "Discrete Acyltransferases and Thioesterases in Iso-Migrastatin and Lactimidomycin Biosynthesis" *Biochemistry* **2024**, 63, 563.
19. Kalkreuter, E.; Kautsar, S. A.; Yang, D.; Bader, C. D.; Teijaro, C. N.; Fluegel, L. L.; Davis, C. M.; Simpson, J. R.; Lauterbach, L.; **Steele, A. D.**; Gui, C.; Meng, S.; Li, G.; Viehriq, K.; Ye, F.; Su, P.; Kiefer, A. F.; Nichols, A.; Cepeda, A. J.; Yan, W.; Fan, B.; Jiang, Y.; Adhikari, A.; Zheng, C.-J.; Schuster, L.; Cowan, T. M.; Smanski, M. J.; Chevrette, M. G.; de Carvalho, L. P. S.; Shen, B. "The Natural Products Discovery Center: Release of the First 8490 Sequenced Strains for Exploring Actinobacteria Biosynthetic Diversity" *BioRxiv* **2024**. <https://doi.org/10.1101/2023.12.14.571759>
18. Jalali, E.; Wang, F.; Overbay, B.; Miller, M.; Shaaban, K.; Ponomareva, L.; Ye, Q.; Saghaeiannejad-Esfahani, H.; Bhardwaj, M.; **Steele, A. D.**; Teijaro, C. N.; Shen, B.; Van Lanen, S.; She, Q.-B.; Voss, S. R.; Phillips, G.; Thorson, J. "Biochemical and Structural Studies of the Carminomycin 4-O-Methyltransferase DnrK" *J. Nat. Prod.* **2024**, 87, 798.
17. Gui, C.*; Kalkreuter, E.*; Liu, Y.-C.; Li, G.; **Steele, A. D.**; Yang, D.; Chang, C. & Shen, B. "Cofactorless Oxygenases Guide Anthraquinone-Fused Enediyne Biosynthesis" *Nat. Chem. Biol.* **2024**, 20, 243.
16. **Steele, A. D.**; Kiefer, A. F. & Shen, B. "The Many Facets of Sulfur Incorporation in Natural Product Biosynthesis" *Curr. Opin. Chem. Biol.* **2023**, 76, 102366.
15. Huang, X.; Pan, W.; Zhong, M.; Chhonker, Y. S.; **Steele, A. D.**; Keohane, C. E.; Mishra, B.; Lucas, L. O. F. R.; Murry, D. J.; Ausubel, F. M.; Wuest, W. M.; Li, C. & Mylonakis, E. "Biological Evaluation of the Antibacterial Retinoid CD437 in *Cutibacterium acnes* Infection" *Antimicrob. Agents Chemother.* **2023**, 67, e01679.
14. **Steele, A. D.***; Kiefer, A. F.*; Hwang, D.*; Yang, D.; Teijaro, C. N.; Adhikari, A.; Rader, C. & Shen, B. "Application of a Biocatalytic Strategy for the Preparation of Tiansimycin-Based Antibody–Drug Conjugates Revealing Key Insights into Structure–Activity Relationships" *J. Med. Chem.* **2023**, 66, 1562.

13. Meng, S.*; **Steele, A. D.***; Yan, W.*; Pan, G.; Kalkreuter, E.; Liu, Y.-C.; Xu, X. & Shen, B. "Thiocysteine Lyases as Polyketide Synthase Domains Installing Hydropersulfide into Natural Products and a Hydropersulfide Methyltransferase" *Nat. Commun.* **2021**, 12, 5672.
12. **Steele, A. D.**; Teijaro, C. N.; Yang, D. & Shen, B. "Leveraging a Large Microbial Strain Collection for Natural Product Discovery" *J. Biol. Chem.* **2019**, 294, 16567.
11. Kim, W.; Zou, G.; Hari, T. P. A.; Wilt, I. K.; Zhu, W.; Galle, N.; Faizi, H. A.; Hendricks, G. L.; Tori, K.; Pan, W.; Huang, X.; **Steele, A. D.**; Csatory, E. E.; Dekarske, M. M.; Rosen, J. L.; Ribeiro, N. Q.; Lee, K.; Port, J.; Fuchs, B. B.; Vlahovska, P. M.; Wuest, W. M.; Gao, H.; Ausubel, F. M. & Mylonakis, E. "A Selective Membrane-targeting Repurposed Antibiotic with Activity Against Persistent Methicillin-resistant *Staphylococcus aureus*" *Proc. Natl. Acad. Sci. U. S. A.* **2019**, 116, 16529.
10. **Steele, A. D.**; Kalkreuter, E.; Pan, G.; Meng, S. & Shen, B. "Hybrid Peptide-Polyketide Natural Product Biosynthesis" *Reference Module in Chemistry, Molecular Sciences and Chemical Engineering.* **2019**, Elsevier.
9. Kim, W.; Zhu, W.; Hendricks, G. L.; **Steele, A. D.**; Sinita, I.; Fricke, N.; Conery, A. L.; Shen, S.; Jayamani, E.; Kwon, B.; Ribeiro, N.; Fuchs, B. B.; Vlahovska, P. M.; Wuest, W. M.; Gao, H.; Ausubel, F. M. & Mylonakis, E. "Discovery and Optimization of nTZDpa as an Antibiotic Effective Against Bacterial Persisters" *ACS Infect. Dis.* **2018**, 4, 1540.
8. Giglio, K. M.; Keohane, C. E.; Stodghill, P. V.; **Steele, A. D.**; Fetzer, C.; Sieber, S. A.; Filiatrault, M. J. & Wuest, W. M. "Transcriptomic Profiling Suggests That Promysalin Alters the Metabolic Flux, Motility, and Iron Regulation in *Pseudomonas putida* KT2440" *ACS Infect. Dis.* **2018**, 4, 1179.
7. Kim, W.; Hendricks, G.; Zhu, W.; Fricke, N.; Tyne, D. V.; Conery, A. L.; Shen, S.; Rajamuthiah, R.; Fuchs, B. B.; Vlahovska, P. M.; Gilmore, M.; **Steele, A. D.**; Keohane, C. E.; Wuest, W. M.; Gao, H.; Ausubel, F. M. & Mylonakis, E. "A New Class of Synthetic Retinoid Antibiotics Effective Against Methicillin-Resistant *Staphylococcus aureus* Persisters" *Nature* **2018**, 556, 103.
6. **Steele, A. D.**; Ernouf, G.; Lee, Y. E. & Wuest, W. M. "Diverted Total Synthesis of the Baulamycins and Analogues Reveals an Alternate Mechanism of Action" *Org. Lett.* **2018**, 20, 1126.
5. Keohane, C. E.; **Steele, A. D.**; Fetzer, C.; Moynie, L.; Khowsathit, J.; Karanicolas, J.; Sieber, S. A. & Wuest, W. M. "Promysalin Elicits Species-Selective Inhibition of *Pseudomonas aeruginosa* by Targeting Succinate Dehydrogenase" *J. Am. Chem. Soc.* **2018**, 140, 1174.
4. **Steele, A. D.**; Keohane, C. E.; Knouse, K. W.; Rossiter, S. E.; Williams, S. J. & Wuest, W. M. "Diverted Total Synthesis of Promysalin Analogs Demonstrates that an Iron-Binding Motif is Responsible for its Narrow-Spectrum Antibacterial Activity" *J. Am. Chem. Soc.* **2016**, 138, 5833.
3. Keohane, C. E.; **Steele, A. D.** & Wuest, W. M. "The Rhizosphere Microbiome: A Playground for Natural Product Chemists" *Synlett.* **2015**, 26, 2739.
2. **Steele, A. D.**; Knouse, K. W.; Keohane, C. E. & Wuest, W. M. "Total Synthesis and Biological Investigation of (-)-Promysalin" *J. Am. Chem. Soc.* **2015**, 137, 7314.
1. Kinzie, C. R.; **Steele, A. D.**; Pasciolla, S. M.; & Wuest, W. M. "Synthesis of Cyclic Dimeric Methyl Morpholinolide – a Common Synthetic Precursor to Cyclic Dinucleotide Analogs" *Tetrahedron Lett.* **2014**, 55, 4966.

TEACHING EXPERIENCE

Teaching Assistant: Scripps Research Natural Product Biosynthesis and Engineering	2021
Teaching Assistant: Temple University Organic Chemistry I	2014
Teaching Assistant: Temple University Organic Chemistry I Laboratory	2014
Teaching Assistant: Temple University Organic Chemistry II Laboratory	2013
Adjunct Instructor: Messiah College General Chemistry I Laboratory	2013

AWARDS AND HONORS

Scarborough Award for Graduate/Postgraduate Excellence: ACS 2020, Virtual Event	2020
F32 Postdoctoral Fellowship: National Institutes of Health	2019
First Place Poster: POCC Industrial Award & Poster Session, Philadelphia, PA	2017
Swern Fellowship: Temple University, Philadelphia, PA	2016
First Place Poster: Younger Chemists Committee Annual Poster Session, Philadelphia, PA	2016
F1000 Poster Prize: FCBIS, Baltimore, MD	2015
Steinbrecher Summer Research Award: Messiah College, Grantham, PA	2011, 2012
Dean's List: Indiana University of Pennsylvania, Indiana, PA	2009, 2010

PROFESSIONAL MEETINGS - ORAL PRESENTATIONS

ACS Florida Annual Meeting and Exposition (FAME): Tampa, FL	2022
American Chemical Society National Meeting: New Orleans, LA	2018
ACS Division of Organic Chemistry Graduate Research Symposium: Portland, OR	2017
American Chemical Society National Meeting: Philadelphia, PA	2016

PROFESSIONAL MEETINGS - POSTER PRESENTATIONS

SIMB Natural Product Discovery and Development in the Genomic Era: San Diego, CA	2023
SIMB Microbiology and Biotechnology Annual Meeting: Austin, TX	2021
SIMB 3 rd International Conference on Natural Product Discovery and Development in the Genomic Era: San Diego, CA (two posters)	2020
Antibiotics: Discovery, Resistance, and Alternatives: Atlanta, GA	2017
POCC Industrial Award & Poster Session: Philadelphia, PA	2017
NYAS Emerging Paradigms in Drug Discovery & Chemical Biology: New York, NY	2016
Gordon Research Conference, Bioorganic Chemistry: Andover, NH	2016
NYAS Chemical Biology Year End Symposium: New York, NY	2016
Frontiers in Chemistry and Biology Interface Symposium: Baltimore, MD	2016
Younger Chemists Committee Annual Poster Session: Philadelphia, PA	2016
Gordon Research Conference, Natural Products: Andover, NH	2015
POCC Industrial Award & Poster Session: Philadelphia, PA	2015
NYAS Chemical Biology Year End Symposium: New York, NY	2015
Frontiers in Chemistry and Biology Interface Symposium: Baltimore, MD	2015
Messiah College Undergraduate Research Symposium: Grantham, PA	2012
Disappearing Boundaries Summer Research Meeting: Annville, PA	2011