

Monica E. McCallum, Ph.D.
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PROFESSIONAL POSITIONS HELD

- 2021 **Assistant Professor of Chemistry**
University of Pennsylvania, Department of Chemistry, Philadelphia, PA
- 2016 – 2021 **Damon Runyon Postdoctoral Fellow**
Harvard University, Department of Chemistry and Chemical Biology, Cambridge, MA
Research advisor: Professor Emily P. Balskus

EDUCATION AND TRAINING

- 2018 **Microbial Diversity Course**
Marine Biological Laboratory, Woods Hole, MA; July 8th – August 22nd, 2018
Independent research project: "Imaging the Microbial Community of the Marine
Sponge *Clathria prolifera*."
Course Directors: Professor Rachel Whittaker and Professor George O'Toole
- 2016 **Ph.D. in Organic Chemistry**, August 13, 2016
Baylor University, Waco, TX
NSF GRFP Predoctoral Fellow
Research Advisor: Professor John L. Wood
- 2013 Ph.D. Candidate in Organic Chemistry, February 4, 2013
Colorado State University, Fort Collins
Research Advisor: Professor John L. Wood
- 2011 **B.S. in Chemistry**, June 11, 2011
University of California at Irvine, Irvine, CA
Chancellor's Scholar
Research Advisor: Professor Kenneth J. Shea

HONORS AND AWARDS

- 2019 ABRCMS Judge Travel Award
- 2018 Certificate of Distinction in Teaching, Harvard University
- 2017 – Present Damon Runyon Postdoctoral Fellow
- 2013 – 2016 NSF GRFP Fellow
- 2010 University of California, Irvine UROP Fellow
- 2010 University of California, Irvine Chemistry SURF Fellow
- 2007 – 2011 University of California, Irvine Chancellor's Scholar

TEACHING AND MENTORING EXPERIENCE

- 2019 **Guest Lecturer**, CHEM 171
Harvard University
- 2018 **Teaching Fellow**, FRESEMR50Q
Harvard University
- 2011 – 2013 **Teaching Assistant**, CHEM 246, CHEM 344, CHEM 346, CHEM 440
Colorado State University

PUBLICATIONS

“*” denotes equal contribution

9. Ng, T.L.*; McCallum, M.E.*; Zheng, C; Wang, J.X.; Wu, K.J.Y.; Balskus, E.P. “The L-alanosine gene cluster encodes a pathway for diazeniumdiolate biosynthesis” *ChemBioChem* **2019**, In Press: doi:[10.1002/cbic.201900565](https://doi.org/10.1002/cbic.201900565)
bioRxiv **2019** doi: [10.1101/763607](https://doi.org/10.1101/763607)
8. McCallum, M.E.; Balskus, E.P. “Enzymes that detoxify marine toxins” *Nature* **2019**, *570*, 315. [News and Views commentary]
doi: [10.1038/d41586-019-01742-1](https://doi.org/10.1038/d41586-019-01742-1)
7. Timmerman, J.C.; McCallum, M.E.; Wood, J.L. “Synthesis and biological evaluation of hippolachnin A analogues” *Org. Lett.* **2019**, *21*, 1242.
doi: [10.1021/acs.orglett.9b00377](https://doi.org/10.1021/acs.orglett.9b00377)
6. McCallum, M.E.; Smith, G.M.; Matsumaru, T.; Kong, K.; Enquist, J.A, Jr.; Wood, J.L. “Synthetic studies toward citrinadin A: construction of the pentacyclic core” *J. Antibiotics* **2016**, *69*, 331. [Special Issue in honor of Prof. Amos B. Smith III]
doi: [10.1038/ja.2016.25](https://doi.org/10.1038/ja.2016.25)
5. McCallum, M.E.*; Rasik, C.M.*; Wood, J.L.; Brown, M.K. “Collaborative total synthesis: routes to (±)-hippolachnin A enabled by quadricyclane cycloaddition and late-stage C-H oxidation” *J. Am. Chem. Soc.* **2016**, *138*, 2437.
doi: [10.1021/jacs.5b13586](https://doi.org/10.1021/jacs.5b13586)
4. Cleary, L.; Mak, V.M.; Pitzen, J.; McCallum, M.E.; Loo, M.M.; Shea, K.J. “Studies toward the synthesis of (–)-stenine” *Tetrahedron Lett.* **2015**, *56*, 3497. [Memorial Symposium-in-Print for Harry Wasserman]
doi: [10.1016/j.tetlet.2015.03.043](https://doi.org/10.1016/j.tetlet.2015.03.043)
3. Matsumaru, T.; McCallum, M.E.; Enquist, J.A., Jr.; Smith, G.M.; Kong, K.; Wood, J.L. “Synthetic studies toward the citrinadins: enantioselective preparation of an advanced spirooxindole intermediate.” *Tetrahedron* **2014**, *70*, 4089. [Special issue in honor of Prof. Sarah E. Reisman for receipt of the Tetrahedron Young Investigator Award]
doi: [10.1016/j.tet.2014.02.046](https://doi.org/10.1016/j.tet.2014.02.046)
2. Kong, K.; Enquist, J.A., Jr.; McCallum, M.E.; Smith, G.M.; Matsumaru, T.; Menhaji-Klotz, E.; Wood, J.L. “An enantioselective total synthesis and stereochemical revision of (+)-citrinadin B.” *J. Am. Chem. Soc.* **2013**, *135*, 10890.
doi: [10.1021/ja405548b](https://doi.org/10.1021/ja405548b)
1. Zeng, Z.; Patel, J.; Lee, S.-H.; McCallum, M.E.; Tyagi, A.; Yan, M.; Shea, K.J. “Synthetic polymer nanoparticle-polysaccharide interactions: a systematic study.” *J. Am. Chem. Soc.* **2012**, *134*, 2681.
doi: [10.1021/ja209959t](https://doi.org/10.1021/ja209959t)

SERVICE AND SOCIETY MEMBERSHIPS

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| 2018 – Present | Harvard Museum of Natural History – Microbial Life Exhibit , Volunteer
Harvard University, Cambridge, MA |
| 2017 | Science Club for Girls , Mentor
Albert F. Argenziano School, Somerville, MA. |
| 2017 – Present | American Society for Microbiology , Member |

PROFESSIONAL ACTIVITIES

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| 2019 | Judge , Annual Biomedical Research Conference for Minority Students (ABRCMS) |
| 2017 – 2018 | Postdoc Coordinator , Harvard Microbial Sciences Initiative (MSI)
Harvard University, Cambridge, MA |