

Benjamin R. McDonald

Department of Chemistry
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Professional Appointments

BROWN UNIVERSITY, PROVIDENCE, RI Assistant Professor of Chemistry Affiliate Faculty, School of Engineering	2021-PRESENT
MASSACHUSETTS INSTITUTE OF TECHNOLOGY, CAMBRIDGE, MA Postdoctoral Fellow, MLK Visting Scholar Advisor: Professor Timothy Swager	2018-2021

EDUCATION

NORTHWESTERN UNIVERSITY, EVANSTON, IL Doctorate of Philosophy, Synthetic Organic Chemistry Advisor: Professor Karl Scheidt Ruth L. Kirschstein National Research Service Award (NRSA) Individual Predoctoral Fellowship	2012-2018
UNIVERSITY OF NORTH CAROLINA ASHEVILLE, ASHEVILLE, NC Bachelor of Science, Chemistry and minor in Biology Distinction in Chemistry, Cum Laude	2008-2012

EXTERNAL FUNDING

RI-INBRE Early Career Development Award "Photonic thin films for the colorimetric detection of waterborne pollutants", \$318,910 total costs	2022
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HONORS & AWARDS

Thieme Chemistry Journals Awardee	2022
Department of Chemistry Award for Outstanding Service (MIT)	2020
MLK Visiting Professors and Scholars Fellowship (MIT)	2019, 2020
Dreyfus Teaching Award (Northwestern)	2015
Ruth L. Kirschstein National Research Service Award (NRSA) Individual Predoctoral Fellowship	2015-2018
Distinction as University Scholar (UNC Asheville)	2012
Distinction as University Research Scholar (UNC Asheville)	2012
Western Carolina ACS Sectional Award (Top graduating chemistry student at UNCA)	2012
Outstanding Performance in Inorganic Chemistry (UNC Asheville)	2011
Outstanding Performance in Organic Chemistry (UNC Asheville)	2010

PROFESSIONAL TEACHING EXPERIENCE

INSTRUCTOR, THE CHEMISTRY OF POLYMERIC ORGANIC MATERIALS, CHEM 1560 FALL, 2022
Brown University, Department of Chemistry

INSTRUCTOR, ADVANCED ORGANIC CHEMISTRY LABORATORY, CHEM 1450-L SPRING, 2022
Brown University, Department of Chemistry

MENTORSHIP

Graduate Students: Timea Kolozsvary (2021-present)

Postdoctoral Scholars: Dr. Saeed Shabazi (incoming), Dr. Tharindu Ranathunge

Undergraduate Students: Helene Koumans, Dennis Kinyua, Ezenna Onuoha, Filip Aubrecht, Angelo Giannopoulos, Chelyn Park

INTERNAL SERVICE

Diversity & Inclusion Action Committee Co-Chair 2022-present

PhD Committee Member (5) 2021-present

Graduate Admissions Committee 2021-present

Instrumentation Committee Member 2022-present

EXTERNAL SERVICE AND AFFILIATIONS

Gaton RIG Research Host 2022
Initiated program and hosted a high school student from Kentucky for a summer research experience. This program is intended to increase access to STEM at Brown for those without access to such research experiences.

Discussion Leader, Tosoh Polymer Conference 2022

Contributor and team captain, SYNFACTs 2019-2021

MIT Chemistry Quality of Life Committee: 2019-2021
Served as the chemistry postdoctoral association representative on committee tasked with improving the Department of Chemistry experience for all students, postdocs, staff, and faculty.

NuBonD: 2016-2017
A founding member of a graduate student-led organization whose primary goal is to foster a community built on inclusivity and diversity of thought, ideas, and backgrounds within the Northwestern chemistry department.

Northwestern Chemistry Department Mentorship Steering Committee: 2015-2018
A founding member of a graduate student organization whose mission is to build a

graduate student peer mentorship program in the Northwestern chemistry department.

Scheidt Lab Outreach 2014-2015

Coordinated and led lab tours as part of BioEXCEL/ChemEXCEL and Science in Society outreach programs at Northwestern for students from underprivileged backgrounds.

Black Graduate Student Association Conference Committee Planning Member: 2014-2015

Served on the planning committee of the 18th annual Northwestern BGSA Graduate Research Conference. A conference focused on sharing and celebrating the work of graduate students of color from the Midwest.

Y.O.U Science Camp Mentor 2015

Guided elementary students from under-represented backgrounds through science exercises.

MORE Mentoring at Niles West High School 2014

Mentored high school freshman in the development and execution of an individual research project.

PUBLICATIONS

Ku, K-H;† McDonald, B.R.;‡ Vijayamohan, H; Zentner, C.A.; Swager, T.M. * “Dynamic Coloration of Complex Emulsions by Localization of Gold Ring Near the Triphase Junction”, *Small*, **2021**, 2007507.

‡ Denotes Equal Contribution (DOI: [10.1002/sml.202007507](https://doi.org/10.1002/sml.202007507))

Li, Y.; Chen, C.; Buchsbaum, S.F.; Meshot, E.R.; Herbert, M.; Zhu, R.; Kulikov, O.; McDonald, B.R.; Bui, N.; Jue, M.; Park, S-J.; Valdez, C.; Hok, S.; Wu, K-J.; Swager, T.M.; Fornasiero, F. “Autonomous Responsive Membranes for Chemical Warfare Protection” *Adv. Funct. Mater.*, **2020**, 2000258. (DOI:[10.1002/adfm.202000258](https://doi.org/10.1002/adfm.202000258))

Bayly, A.A.; McDonald, B.R.; Mrksich, M.; and Scheidt, K. A “Developing New NHC Reactivity Rapidly via a Novel High-Throughput Analysis Platform” *Proc. Natl. Acad. Sc. U.S.A*, **2020**, *117*, 13261. (DOI:[10.1073/pnas.2003347117](https://doi.org/10.1073/pnas.2003347117))

Schroeder, V.; Evans, E.D.; Wu, Y-C.M.; Voll, C-C. A.; McDonald, B.R.; Savagatrup, S.; Swager, T.M. “Chemiresistive Sensor Array and Machine Learning Classification of Food” *ACS Sensors*, **2019**, *4*, 2101-2108. (DOI:[10.1021/acssensors.9b00825](https://doi.org/10.1021/acssensors.9b00825))

Betori, R.; McDonald, B.R.; Scheidt, K. A “Reductive Annulations of Arylidene Malonates with Unsaturated Electrophiles Using Photoredox/Lewis Acid Cooperative Catalysis” *Chem. Sci.*, **2019**, *10*, 3353-3359. (DOI:[10.1039/C9SC00302A](https://doi.org/10.1039/C9SC00302A))

McDonald, B.R.; Scheidt, K.A “Intermolecular Reductive Couplings of Arylidene Malonates via Lewis Acid/Photoredox Cooperative Catalysis” *Org. Lett.*, **2018**, *20*, 6877–6881. (DOI:[10.1021/acs.orglett.8b02893](https://doi.org/10.1021/acs.orglett.8b02893))

McDonald, B.R.; Scheidt, K.A. “Pyranone Natural Products as Inspirations for Catalytic Reaction Discovery and Development,” *Acc. Chem. Res.* **2015**, *48*, 1172-1183. (DOI:[10.1021/ar5004576](https://doi.org/10.1021/ar5004576))

McDonald, B.R.; Nibbs, A.E.; Scheidt, K.A. “A Biomimetic Strategy to Access the Silybins: Total Synthesis of (–)-Isosilybin A,” *Org. Lett.* **2015**, *17*, 98-101. Editor’s Choice Open Access (DOI:[10.1021/ol503303w](https://doi.org/10.1021/ol503303w))

INVITED PRESENTATIONS

“Designing Reactive and Responsive Organochemical Systems” Department of Chemistry, *Lancaster University* (2022)

“Designing Reactive and Responsive Organochemical Systems” Department of Chemistry, *Rhode Island College* (2022)

“Designing Reactive and Responsive Organochemical Systems” Department of Chemistry, *University of Rhode Island* (2022)

“The McDonald Laboratory for Programmable Organic Materials” Department of Chemistry, *University of Massachusetts Dartmouth* (2022)

“The McDonald Laboratory for Programmable Organic Materials” Department of Chemistry, *Trinity College* (2022)

“The McDonald Laboratory for Programmable Organic Materials” School of Engineering, *Brown University* (2021)

“Designing Reactive and Responsive Organochemical Systems” Department of Chemistry, *Brown University* (2021)

“Designing Reactive and Responsive Organochemical Systems” Department of Chemistry, *University of Delaware* (2021)

CONTRIBUTED PRESENTATIONS

MLK Visiting Scholar Luncheon Lecture “Designing Reactive and Responsive Organochemical Systems”, *Oral Presentation*, Cambridge, Massachusetts (2021)

Beckman New England Macro Workshop, “Polymer Surfactants in Dynamic Double Emulsions”, *Poster Presentation*, Cambridge, Massachusetts (2020)

3rd US-Spain Symposium in Asymmetric Catalysis and Chemical Synthesis, “A Biomimetic Strategy to Access the Silybins: Total Synthesis of (–)-Isosilybin A”, *Oral Presentation*, Bilbao, Spain (2016)

251st National ACS Symposium, “A Biomimetic Strategy to Access the Silybins: Total Synthesis of (–)-Isosilybin A,” *Oral Presentation*, San Diego, CA (2016)

251st National ACS Symposium, “REU Research Experiences at Furman University: Effect on My Graduate Research Outcomes,” *Oral Presentation*, San Diego, CA (2016)

International Summer School on Plant Derived Polyphenols as Drug Leads, “Total Synthesis of (–)-Isosilybin A,” *Oral Presentation*, Dresden, Germany (2015)

PATENTS

Scheidt, K.A; Betori, R. C.; McDonald, B.R. “Substituted chromanes, analogs thereof, and methods of use and synthesis” US Patent App. 16/923,843, 2021.