

Vitae of
Michael W. Mullooney

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Education

- 2012 – present University of Illinois at Chicago, Chicago, IL
NIH/NCCIH T32 and AFPE Predoctoral Training Fellow and PhD Candidate in
Pharmacognosy, Department of Medicinal Chemistry and Pharmacognosy, College of
Pharmacy.
- 2009 – 2012 DePaul University, Chicago, IL
Post-baccalaureate studies in chemistry, biology, and calculus.
- 1998 – 2002 School of Art, Arizona State University, Tempe, AZ
BFA with honors in Intermedia, May, 2002.
- 1996 – 1998 Rio Salado Community College
Studies in physics, Spanish, and pre-algebra.
- 1997 Universidad de Salamanca
Study abroad in Spanish language and culture.

Employment

- 2013 – present Department of Medicinal Chemistry and Pharmacognosy, College of Pharmacy,
University of Illinois at Chicago, Chicago, IL
NIH and AFPE Graduate Research Fellow to Dr. Brian T. Murphy
- 2012 College of Pharmacy, University of Illinois at Chicago
Graduate Teaching Assistant
- 2011 – 2012 Freelance Organic and Biochemistry Chemistry Tutor
- 2011 – 2012 Kendall Hunt Publishing & Department of Chemistry, DePaul University
Graphic Artist / Online Textbook Developer
- 2011 – 2012 Department of Chemistry, DePaul University
Undergraduate Organic Chemistry Lab Teacher's Assistant
- 2010 – 2012 Department of Chemistry, DePaul University
Research Assistant to Dr. Justin Maresh

Field Research Experience

- 2014 – 2015 Two, two-week research expeditions in Iceland:

- Collected and processed sediment and invertebrate samples in the West and East fjords marine environment and inland freshwater systems by free diving and SCUBA. Collected marine sediment samples using PONAR from Icelandic Coast Guard's largest vessels Ægir and Thor.
- 2015 One-day field collection trip in Whitehall, MI:
Organized and directed preparations. Collected sediment by PONAR and free diving in White Lake and Lake Michigan.
- 2014 PADI Open Water Diver and Dry Suit Diver certified.

Awards and Honors

- 2015 International Association for Great Lakes Research (IAGLR) Scholarship
- 2015 – 2016 American Foundation for Pharmaceutical Research (AFPE) Predoctoral Fellowship in Pharmaceutical Sciences
- 2015 Third prize in the UIC Image Competition for 'A Rare Bacterial-Derived Diterpene'
- 2014 W. E. van Doren Scholar, Department of Medicinal Chemistry and Pharmacognosy, College of Pharmacy, University of Illinois at Chicago
- 2013 – 2016 NIH NCCIH T32 Predoctoral Training Fellowship

Professional Societies

- 2015 – present American Association for the Advancement of Science (AAAS)
- 2015 – present International Association of Great Lakes Research (IAGLR)
- 2014 – present American Society of Microbiology (ASM)
- 2013 – present American Society of Pharmacognosy (ASP)
- 2010 – present American Chemical Society (ACS)

Journalistic Publications

- 2015 Muldowney, M.W. Andersen Receives Farnsworth Award.
The American Society of Pharmacognosy Newsletter, 2015, 51 (3) 8-9.
- 2013 Muldowney, M.W. Ōmura Honored: 2013 ASP Research Achievement Award.
The American Society of Pharmacognosy Newsletter, 2013, 49 (3) 5-6.

Peer-Reviewed Publications

- 2015 Mullowney, M.W.; Ó hAinmhire, E.; Tanouye, U.; Burdette, J.E.; Pham, V.C.; Murphy, B.T. A Pimarane Diterpene and Cytotoxic Angucyclines from a Marine-Derived *Micromonospora* sp. in Vietnam's East Sea. *Mar. Drugs*. **2015**, *13*, 5815-27.
- 2015 Mullowney, M.W.; Newsome, A.; Wan, B.; Wei, X.; Tanouye, U.; Cho, S. H.; Franzblau S.G.; Murphy, B.T. Diaza-anthracene antibiotics from a freshwater-derived actinomycete that selectively inhibit *M. tuberculosis*. *ACS Infect. Dis.* **2015**, *1*, 168–74. (*NOTE: This article was featured on the cover of the journal.*)
- 2014 Mullowney, M.W.; Ó hAinmhire, E.; Shaikh, A.; Wei, X.; Tanouye, U.; Santarsiero, B.D.; Burdette, J.E.; Murphy, B.T. Diazaquinomycins E–G, novel diaza-anthracene analogs from a marine-derived *Streptomyces* sp. *Mar. Drugs*. **2014**, *12*, 3574-86.
- 2014 Maresh, J. J.; Crowe, S.O.; Ralko, A.; Aparece, M.D.; Murphy, C.M.; Krzeszowiec, M.; Mullowney, M.W. Facile one-pot synthesis of tetrahydroisoquinolines from amino acids via hypochlorite-mediated decarboxylation and Pictet–Spengler condensation. *Tetrahedron Lett.* **2014**, *55*, 5047-51.

Invited Presentations

- 2015 Mullowney, M.W.; Hwang, C.H.; Newsome, A.; Klein, L.; Shaikh, A.; Tanouye, U.; Cho, S.; Franzblau, S.G.; Murphy, B.T. *Natural Products Drug Discovery: Inhibitors of drug-resistant M. tuberculosis from aquatic actinomycetes*. Research talk at Careers in Scientific Research, DePaul University, Chicago, IL, May 15, 2015.
- 2014 Mullowney, M.W.; Hwang, C.H.; Newsome, A.; Klein, L.; Shaikh, A.; Tanouye, U.; Cho, S.; Franzblau, S.G.; Murphy, B.T. *Diaza-anthracene antibiotics that inhibit drug-resistant Mycobacterium tuberculosis*. Research talk at Baxter-UIC NMR Exchange Meeting, Baxter Healthcare, Deerfield, IL, May 21, 2014.

Conference Presentations

- 2015 Mullowney, M.W.; Ó hAinmhire, E.; Tanouye, U.; Burdette, J.E.; Pham, V.C.; Murphy, B.T. A novel pimarane diterpene and cytotoxic angucyclines from a marine-derived *Micromonospora* sp. in Vietnam's East Sea. Poster at the 47th annual conference of the American Society of Pharmacognosy, Copper Mountain, CO, July 27, 2015.
- 2015 Mullowney, M.W.; Ó hAinmhire, E.; Tanouye, U.; Wan B.; Cho S.; Franzblau, S.G.; Burdette, J.E.; Pham, V.C.; Murphy, B.T. A novel diterpene and cytotoxic molecules

from a marine-derived actinomycete in Vietnam. Poster at the 53rd Annual MIKI Medicinal Chemistry Meeting in Miniature, The University of Kansas, Lawrence, KS, April 11, 2015.

- 2014 Mullowney, M.W.; Hwang, C.H.; Newsome, A.; Krishnamoorthy, K.; Roberts, D.; Klein, L.; Shaikh, A.; Tanouye, U.; Rathod, P.; Parish, T.; Cho, S.; Franzblau, S.G.; and Murphy, B.T. *Diaza-anthracene antibiotics from marine and freshwater-derived actinomycete bacteria that inhibit drug-resistant M. tuberculosis*. Poster at the 2014 David J. Slatkin Symposium, Chicago State University, Chicago, IL, November 14, 2014.
- 2014 Mullowney, M.W.; Hwang, C.H.; Newsome, A.; Krishnamoorthy, K.; Roberts, D.; Klein, L.; Shaikh, A.; Tanouye, U.; Rathod, P.; Parish, T.; Cho, S.; Franzblau, S.G.; and Murphy, B.T. *Diaza-anthracene antibiotics from marine and freshwater-derived actinomycete bacteria that inhibit drug-resistant M. tuberculosis*. Poster at the CMIDD 19th Annual Drug Discovery Symposium, Northwestern University, Chicago, IL, October 9, 2014.
- 2014 Mullowney, M.W.; Hwang, C.H.; Newsome, A.; Krishnamoorthy, K.; Roberts, D.; Klein, L.; Shaikh, A.; Tanouye, U.; Rathod, P.; Parish, T.; Cho, S.; Franzblau, S.G.; and Murphy, B.T. *Diaza-anthracene antibiotics from marine and freshwater-derived actinomycete bacteria that inhibit drug-resistant M. tuberculosis*. Poster at the 52nd Annual MIKI Medicinal Chemistry Meeting in Miniature, University of Illinois at Chicago, Chicago, IL, April 12, 2014.
- 2014 Mullowney, M.W.; Hwang, C.H.; Newsome, A.; Krishnamoorthy, K.; Roberts, D.; Klein, L.; Shaikh, A.; Tanouye, U.; Rathod, P.; Parish, T.; Cho, S.; Franzblau, S.; and Murphy, B.T. *Diaza-anthracene antibiotics from marine and freshwater-derived actinomycete bacteria that inhibit drug-resistant M. tuberculosis*. Poster at the Marine Natural Products Gordon Research Conference: From Discovery to Human Health; Ventura, CA, March 5-6, 2014.
- 2014 Mullowney, M.W.; Hwang, C.H.; Newsome, A.; Krishnamoorthy, K.; Roberts, D.; Klein, L.; Shaikh, A.; Tanouye, U.; Rathod, P.; Parish, T.; Cho, S.; Franzblau, S.; and Murphy, B.T. *Diaza-anthracene antibiotics from marine and freshwater-derived actinomycete bacteria that inhibit drug-resistant M. tuberculosis*. Poster at the Marine Natural Products Gordon-Merck Research Seminar: Making Waves in Medicine, Ventura, CA, March 2, 2014.

- 2013 Shaikh, A.; Muldowney, M.W.; Ó hAinmhire, E.; Colunga-Hernandez, D.; Burdette, J.; and Murphy, B.T. *A new antimycin analog from a marine-derived Streptomyces sp.* Poster at the 46th annual conference of the American Society of Pharmacognosy, St. Louis, MO, July 14, 2013.

Scholarly Presentations

- 2014 Muldowney, M.W.; Newsome, A.; Klein, L.; Wei, X.; Cho, S.; Franzabla, S.G.; and Murphy, B.T. *Antibiotics from aquatic-derived actinomycetes that inhibit drug-resistant M. tuberculosis.* Research talk at the Center for Pharmaceutical Biotechnology, College of Pharmacy, University of Illinois at Chicago, Chicago, IL, October 30, 2014.
- 2013 Muldowney, M.W.; Newsome, A.; Klein, L.; Santarsiero, B.; Wei, X.; Cho, S.; and Murphy, B.T. *Diaza-anthracene antibiotics that inhibit drug-resistant Mycobacterium tuberculosis.* Research talk at the Center for Pharmaceutical Biotechnology, College of Pharmacy, University of Illinois at Chicago, Chicago, IL, November 7, 2013.
- 2011 Muldowney, M.W.; and Maresh, J. *Progress toward Cell-Assisted Synthesis of Novel Alkaloids.* Poster at the Chicago Area Undergraduate Research Symposium (CAURS), Chicago, IL, April, 2011.
- 2010 Krzeszowiec, M.W.; Speltz, T.; Lumbreras, E.; Terranova, E.; Aparece, M.; Muldowney, M.; and Maresh, J. *Progress toward Cell-Assisted Synthesis of Novel Alkaloids.* Poster at the Mathematics and Technology Showcase, DePaul University, Chicago, IL, November, 2010.

Editing and Review

- 2014 Linington, R.G.; Williams, P.G.; MacMillan, J.B. *Problems in Organic Structure Determination: A Practical Approach to NMR Spectroscopy*; Taylor & Francis, CRC Press: Boca Raton, FL, USA, 2015.

Technical Skills

Proficient in NMR, HPLC, ELSD, GC, LC-MS, GC-MS, small molecule molecular networking, medicinal chemistry, plant cell culture, and microbiology.