

## Jennifer R. McCall

Assistant Professor of Clinical Research  
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### EDUCATION

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- 2013 MBA University of North Carolina at Wilmington. Wilmington, NC  
Focus: Business of Marine Biotechnology
- 2010 PhD Biology. University of North Carolina at Charlotte. Charlotte, NC.  
Dissertation title: "Sexual dimorphism in sepsis susceptibility: effects of reproductive hormones on microbial pattern recognition receptor expression." Under the direction of Dr. Ian Marriott.
- 2006 MS Biology. University of North Carolina at Charlotte. Charlotte, NC.
- 2003 BS Biology (minor in Chemistry). University of North Carolina at Chapel Hill, Chapel Hill, NC.

### ACADEMIC APPOINTMENTS

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- 2017-present Assistant Professor. Clinical Research Program, School of Nursing, College of Health and Human Services, University of North Carolina Wilmington. Wilmington, NC
- 2014-2017 Health Sciences Lecturer. Department of Biology and Marine Biology, College of Arts and Sciences, University of North Carolina Wilmington. Wilmington, NC
- 2011-2014 Visiting Research Assistant Professor. Center for Marine Science, University of North Carolina Wilmington. Wilmington, NC

### OTHER PROFESSIONAL WORK

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- 2013-present Co-founder and CEO. SeaTox Research Inc. Wilmington, NC

### PUBLICATIONS

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1. Leutou AS, **McCall JR**, York B, Govindapur RR, Bourdelais AJ. (2020). Anti-inflammatory activity of glycolipids and a polyunsaturated fatty acid methyl ester isolated from the marine dinoflagellate *Karenia mikimotoi*. *Marine Drugs*. 18(3): article #138. doi: 10.3390/md18030138
2. **McCall JR**, Holland WC, Keeler DM, Hardison DR, Litaker RW. (2019). Improved accuracy of saxitoxin measurement using an optimized enzyme-linked immunosorbent assay. *Toxins*. 11(11): article #632. doi: 10.3390/toxins11110632
3. Keeler DM, Grandal MK, **McCall JR**. (2019). "Brevenal, a marine natural product, is anti-inflammatory and an immunomodulator of macrophage and lung epithelial cells." *Marine Drugs*. 17(3):184. doi: 10.3390/md17030184
4. Hardison DR, Holland WC, **McCall JR**, Bourdelais AJ, Baden DG, Darius HT, Chinain M, Tester PA, Shea D, Flores Quintana HA, Litaker RW. (2016). Fluorescent Receptor Binding Assay for Detecting Ciguatoxins in Fish. *PLoS ONE* 11(4): e0153348. doi:10.1371/journal.pone.0153348
5. Litaker RW, Hardison DR, Holland WC, Bourdelais AJ, **McCall JR**, Baden DG, Morris JA, Bogdanoff AK, Tester PA. (2014). Ciguatoxin concentrations in invasive lionfish estimated using a fluorescent receptor binding assay. *16<sup>th</sup> ICHA Proceedings*. 2014:184-187
6. **McCall JR**, Elliott EA, Bourdelais AJ. (2014). A new cytotoxicity assay for brevetoxins using fluorescence microscopy. *Marine Drugs*. 12(9):4868-4882.
7. **McCall JR**, Goodman AJ, Jacocks HM, Thompson AM, Baden DG, Bourdelais AJ. (2014). Development of a fluorescence assay for the characterization of brevenal binding to rat brain synaptosomes. *Journal of Natural Products*. 77(9):2014-2020.

8. Goodman A, **McCall JR**, Jacocks HM, Thompson A, Baden DG, Abraham WM, Bourdelais AJ. (2014). Structure activity relationship of brevenal hydrazide derivatives. *Marine Drugs*. 12(4):1839-1858.
9. **McCall JR**, Jacocks HM, Niven SC, Poli MA, Baden DG, Bourdelais AJ. (2014). Development and utilization of a fluorescence-based receptor binding assay for site 5 voltage-sensitive sodium channels ligands brevetoxin and ciguatoxin. *Journal of the AOAC*. 97(2):307-315.
10. Bowen RS, Knab AM, Hamilton AT, **McCall JR**, Moore-Harrison TL, Lightfoot JT. (2012). Effects of supraphysiological doses of sex steroids on wheel running activity in mice. *Journal of Steroids and Hormonal Science*. 3(2):110 doi: 10.4172/2157-7536.1000110
11. **McCall JR**, Jacocks HM, Baden DG, Bourdelais AJ. (2012). Development of a competitive fluorescence-based synaptosome binding assay for brevetoxins. *Harmful Algae*. 19:85-91.
12. **Rettew JA**, McCall SH, Marriott I. (2010). GPR30/GPER-1 mediates rapid decreases in TLR4 expression on murine macrophages. *Molecular and Cellular Endocrinology* 328:87-92.
13. **Rettew JA**, Marriott I, Huet YM. (2010). Gender based differences in the innate immune response to bacterial pathogens. In: Sex hormones and immunity to infection (SL Klein and CW Roberts, Eds). Springer, New York, NY. pp. 123-146
14. **Rettew JA**, Huet YM, Marriott I. (2009). Estrogens augment cell surface TLR4 expression on murine macrophages and regulates sepsis susceptibility in vivo. *Endocrinology* 150: 3877-3884.
15. **Rettew JA**, Huet-Hudson YM, Marriott I. (2008). Testosterone reduces macrophage expression of Toll-like receptor 4, a trigger for inflammation and innate immunity. *Biology of Reproduction* 78: 432-437.

## PRESENTATIONS

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### Invited Speaker/Oral Presentations (\* indicates invited speaker)

1. **2019 NIIMBL National Meeting**. "Partnership for Workforce Development in the Biopharmaceutical Industry" with Dan Baden, Jennifer McCall, and Jonna Clark. Washington, DC. June 28, 2019\*
2. **NIIMBL Member Forum**. "Partnership for Workforce Development in the Biopharmaceutical Industry" with Dan Baden, Jennifer McCall, and Jonna Clark. Live webinar with Q&A. February 28, 2019\*
3. **Carolina Biological Distance Learning Advisory Board meeting**. "Improving the online biology learning experience with hands-on lab kits." Greensboro, North Carolina. August 17, 2017\*
4. **2017 UNCW Applied Learning Summer Institute**. Applied Learning Online. Presentation of applied learning activity for nursing students taking Microbiology for Health Professionals. Wilmington, North Carolina. July 27, 2017\*
5. **Innovation Reconstructed: 30<sup>th</sup> Annual Emerging Issue Forum**. Innovator Spotlight for SeaTox Research Inc and UNC Wilmington collaboration. Institute of Emerging Issues at NC State University. Raleigh, North Carolina. February 9-10, 2015\*
6. **2013 Gordon Research Conference: Mycotoxins and Phycotoxins**. "Utilization of a fluorescence-based receptor binding assay to detect brevetoxins and ciguatoxins." Easton, Massachusetts. June 16-21, 2013.\*
7. **AOAC Pacific NW Section Annual Meeting**. "Development of a fluorescence-based receptor binding assay for site 5 of voltage-sensitive sodium channels in rat brain synaptosomes." Tacoma, Washington. June 18-22, 2012.\*
8. **Cooperative Institute for Ocean Exploration, Research, and Technology Science Review Meeting**. "Development of a fluorescence-based receptor binding assay for brevetoxins and ciguatoxins." Harbor Branch, Florida. October 2-3, 2012.
9. **9th Annual Graduate Research Forum, UNC-Charlotte**. "Estrogen augments cell-surface TLR4 expression on macrophages and regulates sepsis susceptibility in vivo." Charlotte, North Carolina. March 21, 2009. (award winning presentation)
10. **8th Annual Graduate Research Forum, UNC-Charlotte**. "Testosterone reduces macrophage expression of Toll-like receptor 4, a trigger for inflammation and innate immunity." Charlotte, North Carolina. March 15, 2008.

Community Outreach Seminars

11. **CHHS Virtual Café.** "COVID-19 vaccine... The Science Behind our Immunity." Virtual presentation for students, faculty, and community members with 72 attendees. March 31, 2020. (video: <https://uncw.edu/chhs/community/virtual/cafe.html>)
12. **CHHS Community Engagement seminar.** "Vaccines: A dose of evidence." Collaborative presentation on vaccines, immunity, and vaccine hesitancy. With Dr. April Bice (pediatrics vaccination advocacy expert). September 27, 2019.
13. **UNCW Seahawk Preview Day.** "Getting New Medicine to Patients in Need." Master Class for prospective students. April 7, 2018.
14. **Greater Wilmington Business Journal Power Breakfast: Wilmington's Most Intriguing People of 2017.** "Ocean currents bring waves of innovation." Wilmington, North Carolina. December 14, 2017

Scientific Poster Presentations (\* indicates presenter)

15. **2019 Global Marine Science Summit.** "Optimizing Marine Toxin and Natural Product Detection." Tanya Hiltz\*, Jennifer McCall, Maria-Matyska Pesek, Joseph Pesek. Wilmington, NC. October 9, 2019.
16. **2019 NIIMBL National Meeting.** "Biopharmaceutical Industry Workforce Training: Coursework with Applied Learning Leads to Success." Jennifer McCall\*, Jonna Clark, Ashley Alvarez, Travis Corpening, Daniel Baden. Washington, DC. June 27, 2019
17. **2019 Annual College of Health and Human Services Research and Innovation Day.** "Bioassay-guided antimicrobial drug discovery from marine algae." Ashley Bissette\*, Katheryn Sausman, Jennifer McCall. Wilmington, NC. April 1, 2019.
18. **10<sup>th</sup> Indo-Pacific Fish Conference.** "Applicability of the fluorescent Receptor Binding Assay (RBAf) to the detection of Ciguatoxins in Pacific reef fish." Taiana Darius\*, Taina Revel, Jerome Viallon, Jennifer McCall, Ransom Hardison, William Holland, Patricia Tester, Wayne Litaker, Mireille Chinain. Papeete, French Polynesia (Tahiti). October 2-6, 2017.
19. **2017 Cystic Fibrosis Foundation Research Conference.** "Brevenal induces intracellular calcium mobilization and activates extracellular chloride release via calcium-activated chloride channels, resulting in increased airway surface liquid in CF primary human bronchial epithelial cells and in ovine CF mucociliary clearance model." Andrea Bourdelais, Jennifer McCall, Emily Libby, Henry Fortinberry, Susan Birket, Carlos Milla, Guillermo Tearney, Matthias Salathe, Isaac Cohen\*, William Abraham, Steven Rowe, Daniel Baden. Stevenson, Washington. June 18-21, 2017.
20. **UNCW ETEAL Summer Institute.** "Improving the online biology learning experience with hands-on lab kits." Jennifer R. McCall\*, Amanda Kahn Dickens. Wilmington, North Carolina. July 26, 2016.
21. **7<sup>th</sup> Annual Symposium on Harmful Algae.** "Development of Competitive Fluorescence-based Binding Assays for Brevetoxins and Brevenal." Jennifer R. McCall\*, Henry M. Jacobs, Allan J. Goodman, Susan C. Niven, Alysha M. Thompson, Daniel G. Baden, Andrea J. Bourdelais. Sarasota, Florida. October 27-31, 2013.
22. **49<sup>th</sup> annual meeting of the American Society for Cell Biology.** "Activation of GPR30, a novel estrogen receptor, results in acute decreases in TLR4 expression on murine macrophages." Jennifer A. Rettew\* Ian Marriott. San Diego, California. December 5-9, 2009.
23. **96<sup>th</sup> annual meeting of the American Association of Immunologists.** "Long-term biphasic effects of estradiol exposure on murine bone-marrow derived macrophage TLR4 expression" Jennifer A. Rettew\*, Yvette M. Huet, Ian Marriot. Seattle, Washington. May 8-12, 2009.
24. **2<sup>nd</sup> annual meeting of the Organization for the Study of Sex Differences.** "Estrogen augments microbial pattern recognition receptor expression on murine macrophages." Jennifer A. Rettew\*, Yvette M. Huet-Hudson, Ian Marriott. New Orleans, Louisiana. June 4-8, 2008. (award winning presentation)
25. **94<sup>th</sup> annual meeting of the American Association of Immunologists.** "Testosterone attenuates TLR4 expression on murine macrophages." Jennifer A. Rettew\* Ian Marriott. Miami Beach, Florida. May 18-22, 2007.
26. **IV North American Ornithological Conference.** "Factors influencing mortality in nestlings Ospreys (*Pandion haliaetus*): mechanisms for brood reduction." Jennifer A. Rettew\*. Veracruz, Mexico. October 3-7, 2006.

Panel Discussions

- 27. **Understanding SBIR/STTR Programs.** Small Business Technology Development Center (SBTDC) and UNCW Center for Innovation and Entrepreneurship workshop for SBIR grants. August 22, 2017.
- 28. **InnovateNC.** Final cross-city convening meeting. “What is the promise of our continued work?” Panel discussion from entrepreneurs in the InnovateNC: A Cross-City Learning Collaborative program. Wilson, NC. June 9, 2017.
- 29. **Network for Entrepreneurs in Wilmington.** “The hard thing about commercializing high science innovation into middle class jobs.” Panel discussion on challenges facing translation of high technology into commercial potential. Wilmington, NC. May 30, 2017.
- 30. **Cucalorus CONNECT.** “Women in TechNovation.” Panel discussion from successful women in tech, product development, and communications, discussing hurdles women face and why women are less likely than men to become entrepreneurs. Wilmington, NC. November 13, 2015. I

**HONORS/AWARDS**

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- 2020 James F. Merritt Million Dollar Club, UNCW
- 2019 The WilmingtonBiz 100 inaugural class: Innovators
- 2017 Winner of WILMA Magazine’s 2017 Women to Watch, business category
- 2015 Bio 201 course chosen as a sample class for the UNCW OAP “Outstanding Online Program” nomination
- 2013 Outstanding Academic Achievement Award, MBA award, class of 2013, UNCW
- 2013 Beta Gamma Sigma, International Business Honor Society, UNCW chapter
- 2012 Boyd Robison Most Added Value Award, MBA consultation project for Flow Sciences, Inc., UNCW
- 2009 Presentation Excellence Award, 9th Annual Graduate Research Forum, UNCC
- 2008 New Investigator Award for Excellent Poster Presentation, OSSD annual meeting, New Orleans, LA
- 2007 Graduate Assistant Excellence in Teaching Award in Mathematics and Sciences, UNCC
- 2003 Commendation for Undergraduate Research in Biology, UNC