

# Larissa M. Williams

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## RESEARCH INTERESTS

Cellular and molecular responses to toxicants, biological importance of genetic variation

## EDUCATION

2010 North Carolina State University, Department of Environmental and Molecular Toxicology  
**Ph.D. in Environmental Toxicology**  
Dissertation: Signatures of Selection in Natural Populations Adapted to Chronic Pollution  
Advisor: Marjorie Oleksiak

2005 Smith College, Major: Biological Sciences, Minor: Marine Sciences  
**Bachelor of Arts with Highest Honors**  
Honors Thesis: The Use of the Brackish Water Clam, *Rangia cuneata*, in the Biomonitoring of Polycyclic Aromatic Hydrocarbons at the Marine Corps Air Station (MCAS) Cherry Point, NC  
Advisors: Paulette Peckol (Smith College), Patricia McClellan-Green (NC State University)

## PROFESSIONAL APPOINTMENTS

8/18- present Bates College, Department of Biology, Associate Professor  
8/12- 7/18 Bates College, Department of Biology, Assistant Professor  
11/12- 8/15 Woods Hole Oceanographic Institution, Guest Investigator  
6/14- 8/14 Mount Desert Island Biological Laboratory, Visiting Scientist  
3/11-11/12 Woods Hole Oceanographic Institution, Department of Biology,  
NIH NRSA Postdoctoral Fellow. Mark Hahn, Supervisor  
8/11- 5/12 Wheaton College, Department of Biology, Visiting Assistant Professor  
10/10- 2/11 Woods Hole Oceanographic Institution, Department of Biology,  
Postdoctoral Investigator. Mark Hahn, Supervisor

## TEACHING EXPERIENCE

2011- present Bates College, Department of Biology  
2017, 20 Harvard University, **Guest Lecturer** in Principles of Toxicology course  
2011-12 Wheaton College (MA), **Visiting Assistant Professor** of Biology  
2011 Woods Hole Oceanographic Institution, **Instructor** for short course: "Ocean Sciences for British Petroleum Environmental Science Employees"  
2006,7 North Carolina State University, **Lecturer** in Environmental Toxicology

## TEACHING AND MENTORING AT BATES COLLEGE

**Courses offered (regular teaching load = 5 course equivalents per year):**

BIO202 – Cellular Basis of Life	BIOs32 – The Ecology and Evolutionary Biology of the Galapagos Archipelago
BIO204 – Biological Research Experience	BIOs40 – Experimental Developmental and Molecular Biology
BIO 242 – Cellular and Molecular Biology	EXDS215 – STEM Scholars
BIO 328 – Developmental Biology	FYS431 – What's for Dinner?
BIO 331 – Molecular Biology	
BIO 460 – Junior Seminar	

**Mentoring of undergraduate research (since 2012):**

Honors senior thesis (Biology): 1  
Senior thesis (Biology, Biological Chemistry): 35  
Summer student research fellows: 21  
Year-long student research assistants: 8

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## HONORS AND AWARDS

- 2015 Harvard Center for Community Partnerships Faculty Award for Outstanding New Community Partnership Initiative, Bates College
- 2011 Toxicology Scholar Program Awardee, Society of Toxicology
- 2010 Kenneth R. Keller Award for Excellence in Doctoral Dissertation Research, North Carolina State University
- 2004-5 E.J. Murphy Scholarship, Smith College
- 2004 Bookhout Fellowship, Duke University Marine Laboratory
- 2003,4 Five College Coastal and Marine Sciences Research Internship
- 2001-5 First Group Scholar and Dean's list, Smith College

## EXTRAMURAL RESEARCH SUPPORT AND FELLOWSHIPS

- 2014-19 **Maine INBRE P20-GM103423** (PI: Patricia Hand, Mount Desert Island Biological Laboratory), Williams' subaward: \$460,000 total direct costs, "Role of nuclear factor, erythroid 2 (Nfe2) in the oxidative stress response during development," National Institute of General Medical Sciences, National Institutes of Health
- 2014-17 **DBI-1428210** (Lead PI: Larissa Williams), \$791,480 total direct costs, "Acquisition of a white light laser confocal microscope for multidisciplinary research and teaching at a liberal arts undergraduate institution," National Science Foundation Division of Biological Infrastructure
- 2014 Mount Desert Island Biological Laboratory Visiting Scientist Fellowship, \$16,960, "Developmental effects of pro-oxidant exposure"
- 2011-12 **1F32ES019832-01** (PI: Larissa Williams), \$90,214 total direct costs, "Transcription factor cross-talk in developmental toxicity," National Institute of Environmental Health Science, National Institutes of Health.
- 2005-6 **5T32ES007046-29** (PI: Robert Smart, North Carolina State University), Williams' subaward: \$37,250 total direct costs, National Institute of Environmental Health Science, National Institutes of Health.

## INTRAMURAL RESEARCH AND CURRICULAR SUPPORT

- 2019 Faculty Development Grant (\$10,000), Bates College.
- 2019 Student Faculty Research Grant (\$15,000), Bates College, by NIH P20-GM103423 from the National Institute of General Medical Sciences (Maine INBRE)
- 2018 STEM Faculty-Student Summer Research Grant (\$6,736.60), Bates College
- 2016 Student Faculty Research Grant (\$7,500), Bates College, by NIH P20-GM103423 from the National Institute of General Medical Sciences (Maine INBRE)
- 2015 Student Faculty Research Grant (\$7,500), Bates College, by NIH P20-GM103423 from the National Institute of General Medical Sciences (Maine INBRE)
- 2014 Student Faculty Research Grant (\$15,000), Bates College, by NIH P20-GM103423 from the National Institute of General Medical Sciences (Maine INBRE)
- 2014 Harvard Center Faculty Discretionary Grant (\$400), Bates College.
- 2014 Harvard Center Faculty Discretionary Grant (\$1000), Bates College.
- 2013 Undergraduate Research Assistant Grant (\$2,808), co-awarded with William Ambrose, Bates College, by NIH P20-GM103423 from the National Institute of General Medical Sciences (Maine INBRE)
- 2013 Undergraduate Research Assistant Grant (\$3,240), Bates College, by NIH P20-GM103423 from the National Institute of General Medical Sciences (Maine INBRE)

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- 2013 Faculty Development Grant (\$4,024.20), co-awarded with Nancy Kleckner, Bates College
- 2013 Student Faculty Research Grant (\$15,000), Bates College, by NIH P20-GM103423 from the National Institute of General Medical Sciences (Maine INBRE)
- 2012 Faculty Development Grant (\$7,528), co-awarded with Donald Dearborn, Bates College.

## PUBLICATIONS (\* denotes undergraduate author)

**Williams LM**, Bowsher AM, \*Chrysovergi M-A, Ambrose WG Jr (2020). Bloodworm (*Glycera dibranchiata* Ehlers, 1868) populations in the Gulf of Maine are connected through gene flow. *Marine Science and Biology*. **1**: 1-4.

Sant KE, \*Moreau HM, **Williams LM**, Jacobs HM, Bowsher AM, \*Boisvert JD, Smolowitz RM, \*Pantazis J, Timme-Laragy A (2020). Embryonic exposures to mono-2-ethylhexyl phthalate induce larval steatosis in zebrafish independent of Nrf2a signaling. *Journal of Developmental Origins of Health and Disease*. doi: 10.1017/S2040174420000057.

\*Ulin A, \*Henderson J, \*Pham M-T, \*Meyo J, \*Chen Y, Karchner SI, Goldstone JV, Hahn ME, **Williams LM** (2019). Developmental regulation of nuclear factor erythroid-2 related factors (Nrf) by AHR1b in zebrafish (*Danio rerio*). *Toxicological Sciences*, **167(2)**: 536-545.

Jacobs HM, Sant KE, Basnet A, **Williams LM**, Moss JB, Timme-Laragy A (2018). Embryonic exposure to Mono(2-ethylhexyl) phthalate (MEHP) disrupts pancreatic organogenesis in zebrafish (*Danio rerio*). *Chemosphere*, **195**: 498-507.

Sant KE, Hansen JM, **Williams LM**, \*Tran NL, Goldstone JV, Stegeman JJ, Hahn ME, Timme-Laragy A (2017). The role of Nrf1 and Nrf2 in the regulation of glutathione and redox dynamics in the developing embryos. *Redox Biology*, **13**: 207-218.

Lord JP, **Williams LM** (2017). Northward Expansion of Genetically Diverse Invasive Asian Shore Crab (*Hemigrapsus sanguineus*) Populations. *Biological Invasions*, **19(4)**: 1153-1168.

**Williams LM**, \*Lago B, McArthur AG, Raphenya AR, \*Pray N, \*Saleem N, \*Salas S, \*Paulson K, \*Mangar R, Liu Y, Vo AH, Shavit J (2016). The transcription factor, Nuclear factor, erythroid 2 (Nfe2), is a regulator of the oxidative stress response during *Danio rerio* development. *Aquatic Toxicology*, **180**: 141-154.

**Williams LM**, \*Nivison CL, Ambrose WG Jr, \*Dobbin R, Locke WL V (2015). Lack of adult novel northern lineages of invasive green crab *Carcinus maenas* along much of the northern US Atlantic coast. *Marine Ecology Progress Series*, **532**: 153-159.

**Williams LM** (2013). A toxicologist's perspective on having and doing it all: teaching, research, and service at a small liberal arts school. *Journal of Toxicological Education*, **1**:1-9.

**Williams LM**, Timme-Laragy AR, Goldstone JV, McArthur AG, Stegeman JJ, Smolowitz RM, Hahn ME (2013). Developmental expression of the Nfe2-related factor (Nrf) transcription factor family in the zebrafish, *Danio rerio*. *PLoS One*, **8(10)**:e79574.

Sotka EE, **Williams LM**, Oleksiak MF, Strand AE (2012). Can diversifying selection be distinguished from history in geographic clines? A population genomic study of killifish (*Fundulus heteroclitus*). *PLoS One*, **7(9)**:e45138.

**Williams LM**, Oleksiak MF (2011). Evolutionary and Functional analyses of Cytochrome P4501A promoter polymorphisms in natural populations. *Molecular Ecology*, **20(24)**:5236-47.

**Williams LM**, Oleksiak MF (2011). Ecologically and Evolutionarily Important SNPs identified in natural populations. *Molecular Biology and Evolution*, **28(6)**:1817-26.

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Whitehead A, Galvez Z, Zhang S, **Williams LM**, Oleksiak MF (2011). Functional genomics of physiological plasticity and local adaptation in killifish: an emerging model in environmental genomics. *Journal of Heredity*, **102(5)**:499–511.

**Williams LM**, Ma X, Boyko AR, Bustamante CD, Oleksiak MF (2010). SNP identification, verification, and utility for population genetics in a non-model genus. *BMC Genetics*, **11**:32.

**Williams LM**, Oleksiak MF (2008). Signatures of selection in natural populations adapted to chronic pollution. *BMC Evolutionary Biology*, **8**:282.

## CONTRIBUTED PRESENTATIONS AT CONFERENCES (\* denotes undergraduate author)

\*Verma A, **Williams LM**, Trapani J (2020). Poster: Exploring inner-ear phenotypes of Nfe2  $\Delta/\Delta$  KO zebrafish larvae pre- and post-oxidative stress. Beckman Annual Symposium.

\*Verma A, **Williams LM**, Trapani J (2020). Poster: Exploring inner-ear phenotypes of Nfe2  $\Delta/\Delta$  KO zebrafish larvae pre- and post-oxidative stress. Neuron, Hamden, CT.

**Williams LM** (2020). Poster: From surviving to thriving: the use of zebrafish in an introductory CURE course. Maine Zebrafish Symposium, Lewiston, ME.

Bowsher A, \*Ross M, \*Mait M, **Williams LM** (2020). Poster: Role of the transcription factor Nfe2 and pro-oxidant exposure in inner ear development in zebrafish. Maine Zebrafish Symposium, Lewiston, ME.

Bowsher A, \*Ross M, \*Mait M, **Williams LM** (2019). Poster: Role of the transcription factor Nfe2 and pro-oxidant exposure in inner ear development in zebrafish. Maine Biological and Medical Sciences Symposium, Salisbury Cove, ME.

Bowsher A, \*Mait M, **Williams LM** (2019). Poster: Role of the transcription factor Nfe2 and pro-oxidant exposure in inner ear development in zebrafish. Society of Toxicology Annual Meeting, Baltimore, MD.

\*Moreau H, Sant K, **Williams LM**, Timme-Laragy A (2019). Poster: Role of Nrf2a in modulating MEHP-induced hepatosteatosis following embryonic exposure in *Danio rerio*. Society of Toxicology Annual Meeting, Baltimore, MD.

Gray JP, Curran CP, **Williams LM** (2019). Poster: Undergraduate education programs at the Northeast and Ohio Valley regional society of toxicology chapters: large impact for a low cost. Society of Toxicology Annual Meeting, Baltimore, MD.

\*Moreau, H, Sant K, **Williams LM**, Timme-Laragy A (2018). Poster: Role of Nrf2a in modulating MEHP-induced hepatosteatosis following embryonic exposure in *Danio rerio*. Northeast Society of Toxicology Regional Chapter Meeting, Shrewsbury, MA.

Bowsher AM, \*Mait M, **Williams LM** (2018). Poster: Role of the transcription factor Nfe2 and pro-oxidant exposure in inner ear development in zebrafish. Northeast Society of Toxicology Regional Chapter Meeting, Shrewsbury, MA.

\*Ulin A, \*Henderson J, \*Pham M, \*Meyo J, \*Chen Y, Karchner SI, Goldstone JV, Hahn ME, **Williams LM** (2018). Poster: Developmental Regulation of Nuclear Factor Erythroid-2 Related Factors (*nrf*s) by AHR1b. Society of Toxicology Annual Meeting, San Antonio TX.

**Williams LM** (2018). Invited oral presentation: Getting to Yes: Academic Negotiations at a Primarily Undergraduate Institution. Society of Toxicology Annual Meeting, San Antonio TX.

**Williams LM** (2018). Invited oral presentation: Lessons learned from a flipped classroom. Society of Toxicology Annual Meeting, San Antonio TX.

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**Williams LM**, \*Lago B, McArthur AG, Raphenya AR, \*Pray N, \*Saleem N, \*Salas S, \*Paulson K, \*Mangar RS, Liu Y, Vo AH, Shavit JS (2017). Oral presentation: The transcription factor, Nuclear Factor, erythroid 2 (Nfe2), is a regulator of the oxidative stress response during *Danio rerio* Development. Northeast Regional IDeA Conference, Burlington, VT.

**Williams LM**, \*Lago B, McArthur AG, Raphenya AR, \*Pray N, \*Saleem N, \*Salas S, \*Paulson K, \*Mangar RS, Liu Y, Vo AH, Shavit JS (2017). Oral presentation: The transcription factor, Nuclear Factor, erythroid 2 (Nfe2), is a regulator of the oxidative stress response during *Danio rerio* Development. Pollutant Responses in Marine Organisms (PRIMO), Matsuyama, Japan.

\*Pantazis J, Timme-Laragy AR, **Williams LM** (2017). Poster: Roles of CNC b-ZIP Nfe2-Related Factors in response to oxidative stress induced by MEHP. Maine Biological and Medical Sciences Symposium, Salisbury Cove, ME.

**Williams LM**, Kleckner N, Gould T (2017). Poster: Cultivating a Relationship with Students and Faculty from a Local Community College Through Short Courses. Society of Toxicology Annual Meeting, Baltimore, MD.

\*McLean M, \*Theriault D, \*Kelley M, \*Lago B, McArthur A, **Williams LM** (2017). Poster: Role of Nfe2 and pro-oxidant exposure in inner ear development in zebrafish. Society of Toxicology Annual Meeting, Baltimore, MD.

**Williams LM**, \*Lago B, McArthur AG, Raphenya AR, \*Pray N, \*Saleem N, \*Salas S, \*Paulson K, \*Mangar RS, Liu Y, Vo AH, Shavit JS (2017). Poster: The transcription factor, Nuclear Factor, erythroid 2 (Nfe2), is a regulator of the oxidative stress response during *Danio rerio* Development. Society of Toxicology Annual Meeting, Baltimore, MD.

**Williams LM** (2017). Invited oral presentation: Navigating the Hiring Process at a Primarily Undergraduate Institution. Society of Toxicology Annual Meeting, Baltimore, MD.

Karchner SI, Jenny MJ, Aluru N, Franks DG, Laub LB, Linney E, **Williams LM**, Teraoka H, Hahn ME (2017). Poster: Evidence for developmental versus toxicological roles for zebrafish Ahr1b. Society of Toxicology Annual Meeting, Baltimore, MD.

Gray J, Willett K, **Williams L**, Fitsanakis V, Eidemiller B, Reynolds M (2017). Poster: The Society of Toxicology's Eminent Toxicologist Recorded Lecture Series: Usage Data and Examples for Use in Teaching. Society of Toxicology Annual Meeting, Baltimore, MD.

\*Ulin A, **Williams LM** (2017). Poster: Use of chromatin immunoprecipitation in developing zebrafish (*Danio rerio*) to show direct regulation of *nrf* genes by Ahr1B. Yale Undergraduate Research Conference, New Haven, CT.

\*Theriault D, \*McLean M, **Williams LM** (2016). Poster: Inner ear development in zebrafish (*Danio rerio*) under conditions of oxidative stress. MDIBL Annual Student Symposium, Salisbury Cove, ME.

**Williams LM**, McArthur A, \*Lago B, \*Pray N, \*Saleem N, \*Salas S, \*Paulson K, \*Mangar R, Liu Y, Vo A, Shavit J (2016). Poster: Nuclear factor, erythroid 2 (Nfe2) is a novel transcriptional regulator of oxidative stress during development. 6<sup>th</sup> Biennial National IDeA Symposium of Biomedical Research Excellence, National Institutes of Health, Washington, D.C.

\*Tran NL, Timme-Laragy AR, **Williams LM** (2016). Oral presentation: Role of Nrf1 paralogs in regulating the transcriptional response to phthalates in zebrafish (*Danio rerio*). Maine Biological and Medical Sciences Symposium, Salisbury Cove, ME.

\*Henderson J, **Williams LM** (2016). Poster: Utilizing Chromatin Immunoprecipitation to Investigate Transcriptional Regulation in Zebrafish (*Danio rerio*) during Early Development. Maine Biological and Medical Sciences Symposium, Salisbury Cove, ME.

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**Williams LM**, Lord JP (2016). Oral presentation: Distribution and genetic diversity of the Asian shore crab, *Hemigrapsus sanguineus*, along the East Coast of the United States. Benthic Ecology Annual Meeting, Portland, ME.

**Williams LM** (2016). Invited oral presentation: A semester-long, inquiry-based, lab using the aryl hydrocarbon receptor (Ahr) in an upper-level undergraduate biology course. Society of Toxicology Annual Meeting, New Orleans, LA.

\*Tran NL, **Williams LM**, Timme-Laragy AR (2016). Poster: Role of Nrf1 paralogs in regulating the transcriptional response to phthalates in zebrafish (*Danio rerio*). Society of Toxicology Annual Meeting, New Orleans, LA. **Pfizer Travel Award Awardee**

\*Jacobs HM, Sant KE, **Williams LM**, Timme-Laragy AR (2016). Poster: Mono-2-ethylhexyl phthalate (MEHP) alters embryonic growth and pancreatic organogenesis in zebrafish. Society of Toxicology Annual Meeting, New Orleans, LA.

**Williams LM**, \*Pray N, \*Saleem N, \*Salas S, \*Paulson K, \*Mangar, R (2015). Oral presentation: Response to structurally diverse pro-oxidant exposure during development. IDEA Northeast Regional Conference, Bar Harbor, ME.

**Williams LM**, \*Pray N, \*Saleem N, \*Salas S (2015). Poster: Response to structurally diverse pro-oxidant exposure during development. Cellular and Molecular Mechanisms of Toxicity Gordon Research Conference, Andover, NH.

\*Morrill KM, **Williams LM** (2015). Oral presentation: Genetic diversity and the 2013 decline of eelgrass (*Zostera marina*) beds of the Frenchman Bay, ME coastlines. Maine Biological and Medical Sciences Symposium, Salisbury Cove, ME.

\*Pham MT, **Williams LM** (2015). Oral presentation: Transcriptional regulation of the nuclear factor erythroid 2-related factor (*nrf*) family by the aryl hydrocarbon receptor-1b (Ahr1b) during *Danio rerio* development by chromatin immunoprecipitation. Maine Biological and Medical Sciences Symposium, Salisbury Cove, ME.

\*Pray N, \*Saleem N, \*Salas S, **Williams LM** (2015). Poster: Toxicity of pro-oxidants in the developing zebrafish, *Danio rerio*. Maine Biological and Medical Sciences Symposium, Salisbury Cove, ME.

**Williams LM**, \*Nivison CL, Ambrose WG Jr, \*Dobbin R, Licke WL (2015). Oral presentation: Loss of adult novel northern lineages of the invasive green crab, *Carcinus maenas*, along the Northwestern Atlantic Coast. Benthic Ecology Meeting, Quebec City.

**Williams LM**, Timme-Laragy AR, Goldstone JV, McArthur AG, Stegeman JJ, Smolowitz RM, Hahn ME (2014). Invited oral presentation: Developmental expression of the *nrf* gene family and crosstalk with the aryl hydrocarbon receptor. Maine Biological and Medical Sciences Symposium, Salisbury Cove, Maine.

Hahn ME, Karchner SI, Aluru N, Timme-Laragy AR, **Williams LM** (2014). Invited oral presentation: Diversity as Opportunity: Using fish models to understand the role of conditional transcription factors in mechanisms of developmental toxicity. A Collaborative Workshop on Aquatic Models and 21st Century Toxicology: Leveraging Small Aquarium Fishes to Advance Understanding of Environmentally Influenced Human Disorders and Diseases, Research Triangle Park, NC.

Gray JP, Billack B, Borland MG, Ford SM, Gallo MA, Hall G, Ray SD, Reynolds M, Slitt AL, **Williams LM**, Zamule SM (2014). Poster: The Journal of Toxicological Education (JToxEd)—A Milestone in Toxicology Education. Society of Toxicology Annual Meeting, Phoenix, AZ.

**Williams LM** (2013). Poster: Investigation into the evolutionary response of natural populations to chronic anthropogenic pollution. Ecological and Evolutionary Genomics Gordon Research Conference, Biddeford, ME.

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**Williams LM**, Timme-Laragy AR, Goldstone JV, McArthur AG, Stegeman JJ, Smolowitz RM, Hahn ME (2013). Oral presentation: Developmental expression of the Nfe2-related factor (Nrf) transcription factor family. North Atlantic Zebrafish Research Symposium, Orono, ME.

**Williams LM**, Oleksiak MF (2012). Invited oral presentation: Signatures of selection in natural populations adapted to chronic pollution. Ecological Society of America Annual Meeting, Portland, OR.

**Williams LM**, Timme-Laragy AR, Franks DG, Jenny MJ, Hahn ME (2012). Poster: Developmental expression of the Nfe2-related (nrf) transcription factor family and regulation by Ahr2. Society of Toxicology Annual Meeting, San Francisco, CA.

**Williams LM**, Oleksiak MF (2011). Poster: Selection in natural populations. Ecological and Evolutionary Genomics Gordon Research Conference, Biddeford, ME.

**Williams LM**, Oleksiak MF (2011). Poster: Cytochrome P4501A promoter polymorphisms in natural populations. Society of Toxicology Annual Meeting, Washington D.C.

**Williams LM**, Oleksiak MF (2010). Poster: Promoter polymorphisms and function in natural populations. New England Membrane Enzyme Group (NUTMEG) Conference, Woods Hole, MA.

**Williams LM**, Oleksiak MF (2010). Poster: Genome scans in natural populations for selectively important SNPs using high-throughput technology. Society of Toxicology Annual Meeting, Salt Lake City, UT.

**Williams LM**, Oleksiak MF (2008). Poster: Genome-wide scans in a non-model species using 454 pyrosequencing. Society for Molecular Biology and Evolution Annual Meeting, Barcelona, Spain.

**Williams LM**, Oleksiak MF (2007). Oral presentation: Signatures of selection in natural populations adapted to chronic pollution. Society for Molecular Biology and Evolution Annual Meeting, Halifax, Nova Scotia, Canada.

**Williams LM**, Oleksiak MF (2006). Poster: Genome Search for Selectively Important Loci in *Fundulus heteroclitus* populations. Society for Molecular Biology and Evolution Annual Meeting, Tempe, AZ.

## INVITED RESEARCH SEMINARS

Williams LM, The use of genetic analysis to understand the population dynamics of three marine species in Maine. Marine Sciences Seminar Series, September 27, 2019, University of Maine, Orono, ME.

Williams LM, The role of the transcription factor Nfe2 in developmental toxicology. Biomedical Sciences Seminar Series, September 6, 2019, University of North Dakota, Grand Forks, ND.

Williams LM, A tale of two transcription factors: the role of proteins during zebrafish development. Environmental Health Sciences Seminar Series, April 20, 2016, University of Massachusetts, Amherst, MA.

Williams LM, Role of conditional transcription factors during development. Molecular and Biomedical Sciences Seminar Series, April 1, 2016, University of Maine, Orono, ME.

Williams LM, What's a Nrf? The role of CNC-bZIP proteins during zebrafish development. Mount Desert Island Biological Laboratory Scientific Seminar Series, March 22, 2016, Salisbury Cove, ME.

Williams LM, The role of proteins in responding to environmental stress in fish. Southern Maine Community College Science Department Seminar, November 16, 2015, South Portland, ME.

Williams LM, 2013/2014 Green crab genetics along the northern US east coast. Brunswick Marine Resource Council Meeting, September 3, 2014, Brunswick, ME.

Williams LM, Developmental expression of the *nrf* gene family and crosstalk with the aryl hydrocarbon receptor. Toxicology and Environmental Health Science Seminar, November 26, 2013, North Carolina State University, Raleigh, NC.

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Williams LM, Signatures of selection in natural environments adapted to chronic pollution. Department of Integrative Biology Seminar Series, October 17, 2013, University of South Florida, Tampa, FL.

Williams LM, Developmental expression of the *nrf* gene family and crosstalk with the Ahr pathways in zebrafish. Applied Medical Sciences Seminar, September 12, 2013, University of South Maine, Portland, ME.

Williams LM, Molecular exploration of stress and selection in the aquatic environment. December 12, 2011, Bates College, Lewiston, ME.

Williams LM, Coincidence or crosstalk: observations of Cyp, Ahr, and Nrf pathways during development. Toxicology Roundtable, August 4, 2012, Woods Hole Oceanographic Institution, Wood Hole, MA.

Williams LM, New Bedford Harbor: History, Pollution and Adaptation. Science Made Public Lecture Series, July 24, 2012, Woods Hole Oceanographic Institution, Woods Hole, MA.

Williams LM, The New Bedford Harbor Superfund Site: Politics, Pollution and Adaptation. Saul Krasner Memorial Science Lecture Series, September 20, 2011, United States Coast Guard Academy, New London, CT.

Williams LM, Genomic analyses of polluted, natural populations. Biology Seminar, April 7, 2011, University of Vermont, Burlington, VT.

Williams LM, Environmental genomics of adaptation to pollution stress. Life Sciences Colloquium, March 15, 2011, Smith College, Northampton, MA.

Williams LM, Signatures of selection in natural populations adapted to chronic pollution. Department of Biology Seminar, November 18, 2010, Woods Hole Oceanographic Institution, Woods Hole, MA.

Williams LM, Signatures of selection in natural populations adapted to chronic pollution. Science Lecture Series, September 30, 2010, Norwich University, Norwich, VT.

## **WORKSHOPS, WEBINARS, AND SPECIALIZED COURSES**

Webinar presenter: From surviving to thriving: the use of zebrafish in an introductory CURE course. Society of Toxicology Online Scientific Session, June 9, 2020.

Founder and organizer: Maine Zebrafish Symposium, Bates College, Lewiston, ME, February 8, 2020.

Participant: Gordon Research Conference “Achieving Widespread Improvement In Undergraduate Education”, Bates College, Lewiston ME, June 23-28, 2019.

Participant: CURE Institute, Community College of Rhode Island, Warwick RI, June 3-5, 2019.

Workshop convener and participant: R for Reproducible Scientific Analysis, Bates College, Lewiston, ME, May 13-14, 2019.

Webinar presenter: A Semester-Long, Inquiry-Based, Lab Using the Aryl Hydrocarbon Receptor (Ahr) in an Upper-Level Undergraduate Biology Course. Partnership for Undergraduate Life Sciences Education (PULSE) Network Webinar, February 22, 2017.

Participant: Council on Undergraduate Research Institute on Broadening Participation: Preparedness, Climate & Mentorship, Florida Southern College, Tampa, FL, January 13-15, 2017.

Participant: Big genomic data skills for professors, The Jackson Laboratory, Farmington, CT, May 23-27, 2016.

Webinar presenter: Using fish to illustrate principles of undergraduate lab classes. Society of Toxicology Undergraduate Educator Network Webinar, December 15, 2015.



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Workshop director and instructor: Use of confocal microscopy in the biomedical sciences: a collaboration with Southern Maine Community College, Bates College, Lewiston, ME, August 17-21, 2015.

Participant: Applied Bioinformatics, Mount Desert Island Biological Laboratory, Salisbury Cove, ME, October 9-14, 2014. Course director: Benjamin King.

Workshop director and instructor: An introduction to molecular and microscopy techniques to explore phenotypic plasticity: a collaboration with Southern Maine Community College, Bates College, Lewiston, ME, August 11-22, 2014.

Course director and instructor: Comparative Biomedical Models, Mount Desert Island Biological Laboratory, Salisbury Cove, ME, May 26-June 6, 2014.

Webinar presenter: Having & Doing It All: Teaching, Research, & Service at a Small Liberal Arts College. Society of Toxicology Undergraduate Educator Network Webinar, November 19, 2013.

Workshop convener: The Science of Science Writing, Bates College, Lewiston, ME, November 12, 2013.

Workshop director and instructor: Bringing Molecular and Imaging Technology to South Maine Community College, Bates College, Lewiston, ME, August 19-23, 2013.

Participant: Killifish Genome Annotation Workshop and Meeting, Mount Desert Island Biological Laboratory, Salisbury Cove, ME, September 14-19, 2012. Course directors: Drs. Andrew Whitehead and Joseph Shaw.

Participant: Developmental Biology Teaching Workshop, Darling Marine Laboratory, Walpole, ME, June 19-23, 2012. Course directors: Drs. Leland Johnson, Eric Cole, and Jennifer Wolff.

Workshop convener: Negotiation seminar for graduate students and postdocs, Woods Hole Oceanographic Institution, Woods Hole, MA, June 2, 2012.

Participant: Gears for Scientific Success: COSEE Professional Development Workshop for Early Career Scientists, Woods Hole Oceanographic Institution, Woods Hole, MA, May 22, 2012.

Participant: Analytical and Quantitative Light Microscopy, Marine Biological Laboratory, Woods Hole, MA, May 8-18, 2012. Course directors: Greenfield Sluder, Jason Swedlow, and David Wolf.

Participant: Forward to Professorship, Gallaudet University, Washington, D.C., May 23-25, 2011.

Participant: From Data Dumps to Clear Documents: Writing Effectively for Science and Engineering, University of Miami, Miami, FL, November 21, 2009. Course instructor: Dr. Judith Swan.

## **PROFESSIONAL SERVICE ACTIVITIES**

### Committees and Other Service

2020- present	Co-chair, Faculty United for Toxicology Undergraduate Recruitment and Education, Society of Toxicology
2020- present	Nominating Committee, Society of Toxicology
2019- present	Councilor, Northeast Society of Toxicology Regional Chapter, Society of Toxicology
2019- present	Councilor, Molecular and Systems Biology Specialty Section, Society of Toxicology
2019- present	HHMI Leadership Team, Bates College
2019- present	President, Southern Maine Chapter of Sigma Xi
2018- present	Editorial Board, Toxicology Mechanisms and Methods
2014- present	Review Editor, Frontiers in Evolutionary and Population Genetics
2013- present	Founding Editor, Journal of Toxicological Education
2019- 2020	Member, Faculty United for Toxicology Undergraduate Recruitment and Education, Society of Toxicology

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2011,16 CDI Undergraduate Diversity Program Sunday mentor, Society of Toxicology  
2019 Bates College Biological Chemistry honors thesis committee for Nathan Frederick  
2016, 19 Panelist, National Science Foundation, Major Research Instrumentation (MRI) Panel  
2018- 2019 Ad hoc member, Undergraduate Education Subcommittee, Society of Toxicology  
2017- 2019 Diversity in STEM Initiative (DSI), Bates College  
2016- 2019 Teaching and Learning Committee, Bates College (chair from 2017-2018)  
2015- 2019 Table Host for *In Vitro* Luncheon, Society of Toxicology Annual Meeting  
2012- 2019 Institutional Biosafety Committee, Bates College  
2018 CDI Undergraduate Diversity Program 3-day mentor, Society of Toxicology  
2017- 2018 Chair, Undergraduate Education Subcommittee, Society of Toxicology  
2016- 2017 Co-Chair, Undergraduate Education Subcommittee, Society of Toxicology  
2017, 18 Volunteer for Career Exploration event at Society of Toxicology Annual Meeting  
2014, 17,18 Mentoring Facilitator, Society of Toxicology  
2014-16 Committee on the Evaluation of Teaching, Bates College  
2012-15 Biological Chemistry Program Committee, Bates College  
2015 Undergraduate Education Subcommittee, Society of Toxicology  
2015 Panelist, National Science Foundation, Integrative Ecological Physiology full  
proposal study section  
2015 Ad hoc research proposal reviewer, National Science Foundation, Arctic Observing  
Network Program  
2015 Reviewer, National Science Foundation, Evo-Devo-Eco Network Hi  
2015 Panelist, National Science Foundation, Integrative Ecological Physiology preliminary  
proposal study section  
2015 Bates College Biological Chemistry honors thesis committee for Joshua Zimmer  
2014 Bates College Neuroscience honors thesis committee for Abigail Alexander  
2013-14 Student Research Committee, Bates College  
2011-12 Advocacy Committee, National Postdoctoral Association  
2011-12 Councilor, Society of Toxicology Postdoctoral Assembly Board  
2010-11 President, Woods Hole Oceanographic Institution Postdoctoral Association  
2010-11 Gender Equity Committee, Woods Hole Oceanographic Institution

## Journal Reviewer

Aquatic Toxicology, Axios Review, BMC Evolutionary Biology, Clinical and Experimental Pharmacology and Physiology, Comparative Biochemistry and Physiology, Current Zoology, Environmental Toxicology and Pharmacology, Evolutionary Applications, Heredity, International Journal of Molecular Sciences, Journal of Toxicological Education, MDIBL Bulletin, Molecular Biology and Evolution, Molecular Ecology, PLoS One, Toxicology Mechanisms and Methods, and Toxicological Sciences.

## Textbook Reviewer

Lewin's Essential Genes (2013), Principles of Development (2016), Writing in the Biological Sciences (2017), Biology: How Life Works (2019), Introduction to Toxicology (2019),

## Community Outreach

Volunteer at Riding to the Top (therapeutic riding program; Windham, ME), 2013- present  
Organizer for Annual Bates College Darwin Day with Lewiston Middle School (2015, '16, '17, '18, '19)  
Maine State Science Fair Judge, 2015, '17  
Falmouth Middle and High School Science Fair Judge, 2011, '12

## Membership in Professional and Honor Societies

American Association for the Advancement of Science, Sigma Xi, and Society of Toxicology