

MARIO E. MUSCARELLA

Department of Biology, Indiana University, Bloomington, Indiana 47405

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EDUCATION

Indiana University Biology, Ph.D.; Evolution, Ecology & Behavior Program	<i>Aug 2012 – Present</i>
Michigan State University Microbiology & Molecular Genetics Ecology and Evolutionary Biology	<i>June 2010 – Aug 2012</i>
Armstrong State University Biology, Summa Cum Laude, B.S.	<i>Aug 2004 – May 2008</i>

EXPERIENCE

Graduate Research Assistant, Ph.D. Candidate <i>Indiana University</i> Lennon Lab: Aquatic Microbiology, Molecular and Ecological Strategies of Resource Utilization; Interactions between Microbes and Molecules	<i>November 2010 – Present</i> <i>Bloomington, IN</i>
Associate Instructor <i>Indiana University</i> Courses Taught: Quantitative Biodiversity; Environmental Microbiology; Introductory Biology Lab	<i>Jan 2013 – May 2015</i> <i>Bloomington, IN</i>
Graduate Teaching Assistant <i>Michigan State University</i> Courses Taught: Microbial Metagenomics; Cells and Molecules Lab; Introductory Microbiology Lab	<i>Jun 2011 – Aug 2012</i> <i>East Lansing, MI</i>
Research Technician <i>University of Georgia Marine Institute</i> Booth Lab: Georgia Coastal Ecosystems LTER, & Sapelo Island Microbial Observatory	<i>Jun 2008 – Jun 2010</i> <i>Sapelo Island, GA</i>
Undergraduate Research Assistant <i>Armstrong State University</i> Awong-Taylor Lab: Environmental Microbiology	<i>Sep 2015 – May 2008</i> <i>Savannah, GA</i>
Labaratory Technician <i>Armstrong State University</i> Introductory Microbiology Labs: Media and Reagent Preparation; Lab Oversight	<i>Sep 2005 – May 2008</i> <i>Savannah, GA</i>

PUBLICATIONS

- Muscarella ME**, Jones SE, Lennon JT (In Review) Species sorting along a subsidy gradient alters community stability. *bioRxiv Preprint* doi: <http://dx.doi.org/10.1101/031476>
- Shoemaker WR*, **Muscarella ME***, Lennon JT (2015). Genome Sequence of the Soil Bacterium *Janthinobacterium* sp. KBS071. *Genome Announcements*, 3(3):e00689-15
- Muscarella ME**, Bird KC, Larsen ML, Placella SA, Lennon JT (2014). Phosphorus resource heterogeneity affects the structure and function of microbial food webs. *Aquatic Microbial Ecology*, 73(3):259-272
- Lennon JT, Hamilton SK, **Muscarella ME**, AS Grandy, K Wickings, SE Jones (2013). A source of terrestrial organic carbon to investigate the browning of aquatic ecosystems. *PLoS ONE* 8(10):e75771

J. Awong-Taylor, K. Craven, L. Griffiths, C. Bass and **M. Muscarella** (2008) . Comparison of biochemical and molecular methods for the identification of bacterial isolates associated with failed loggerhead sea turtle eggs. *Journal of Applied Microbiology*. 104:1244-1251

Kathryn S. Craven, Judy Awong-Taylor, Laura Griffiths, Crystal Bass & **Mario Muscarella** (2007). Identification of Bacterial Isolates from Unhatched Loggerhead (*Caretta caretta*) Sea Turtle Eggs in Georgia, USA. *Marine Turtle Newsletter* 115:9-11

(* *co-first authors*)

GRANTS

NSF Doctoral Dissertation Improvement Grant \$19,004 2015 – 2007

DISSERTATION RESEARCH: Metabolic Resource Partitioning: Scaling Microbial Physiology from Individual Activity to Ecosystem Function

Indiana Academy of Sciences Senior Research Grant \$2,200 2014 – 2015

Metabolic Fate of Terrestrial Carbon Resources: Anabolic vs. Catabolic Processes

Huron Mountain Wildlife Foundation Grant Renewal \$3,299 2012 – 2014

Browning of Freshwater Ecosystems: Will Terrestrial Carbon Loading Alter the Diversity and Function of Aquatic Microbial Communities?

Huron Mountain Wildlife Foundation \$5,600 2011 – 2012

Browning of Freshwater Ecosystems: Will Terrestrial Carbon Loading Alter the Diversity and Function of Aquatic Microbial Communities?

HONORS AND AWARDS

Floyd Microbiology Summer Fellowship \$2000 2013 & 2014

Department of Biology, Indiana University, Bloomington, IN

Floyd Microbiology Travel Award \$300 2012

Department of Biology, Indiana University, Bloomington, IN

University Distinguished Fellowship 2010

Graduate School, Michigan State University, East Lansing, MI

Early Start Fellowship 2010

College of Natural Sciences, Michigan State University, East Lansing, MI

Les Davenport Award 2008

Biology Department, Armstrong State University. Savannah, GA

ASB Research Award in Microbiology 2008

Presented at the 69th Annual Association of Southeastern Biologists Conference
Best Paper Presentation in the Area of Microbiology

Faculty Recognition Award 2007

Biology Department, Armstrong State University. Savannah, GA

WORKSHOPS

2013 Software Carpentry Workshop, Bloomington IN

2012 DOM Fluorescence Workshop, INSTAAR, Boulder CO

2010 Mothur Software Workshop, Detroit MI

PROFESSIONAL AFFILIATIONS

Ecological Society of America
American Society of Limnology and Oceanography
Indiana Academy of Sciences
Great Lakes Ecological Observatory Network
American Society for Microbiology

SERVICE

Reviewer

Journals: *Science*, *Biogeochemistry*, *ISME*, *PNAS*
Books: *Processes in Microbial Ecology*, *Kirchman (2012)*

Committee Member

Michigan State University: *MMG Grad Committee*
Indiana University: *IU Biology GRW Transportation*

Outreach

Jim Holland Summer Enrichment Program (Indiana University): *Stream Health & Micro-Invertebrate Assessment* (2012 – 2015)
Wonderlab Science Museum (Bloomington, IN): *Good Microbes Exhibit* (2012 – 2014)
Women in STM (Indiana University): *Stream Micro-Invertebrate Assessment* (2012)

Professional Society Leadership

Graduate Student Liaison for Microbial Ecology Section, ESA (2013 – 2015)

Special Session Co-Organizer

The Dance Between Microbes and Molecules
ASLO Summer Meeting, Santa Fe NM (2016)

Conference Co-Organizer

2015 Midwest Ecology and Evolution Conference. Bloomington, IN

Course Development

Quantitative Biodiversity (2015, Indiana University)
repo: <https://github.com/quantitativebiodiversity>
website: <http://documentup.com/QuantitativeBiodiversity/QuantitativeBiodiversity>

INVITED SEMINARS

Muscarella ME (2015) Microbes and resources: individuals, communities, and ecosystem function. Program in Ecology, Evolution, and Conservation Biology, University of Illinois at Urbana-Champaign.

CONTRIBUTED PRESENTATIONS

Muscarella ME, Lennon JT (2015) Bacterial growth efficiency: do consumer and resource diversity influence the fate of carbon in aquatic ecosystems? Ecological Society of America 100th Annual Meeting, Baltimore MD.

Muscarella ME, Locey KJ, Nevo E, Raz S, Lennon JT (2014) Microbial community assembly at Evolution Canyon: Does dormancy dilute the effects of dispersal and filtering? Ecological Society of America 99th Annual Meeting, Sacramento CA.

Muscarella ME, Bird KC, Larsen ML, Placella SA, Lennon JT (2014) Phosphorus resource heterogeneity affects the structure and function of microbial food webs. American Society of Limnology and Oceanography, Portland OR.

Muscarella ME, Bird KC, Larsen ML, Placella SA, Lennon JT (2014) Phosphorus resource heterogeneity affects the structure and function of microbial food webs. Midwest Ecology and Evolution Conference, Dayton OH.

Muscarella ME, Jones SE, Lennon JT (2013) Species Sorting Along a Subsidy Gradient Affects Community Stability. Ecological Society of America 98th Annual Meeting, Minneapolis MN.

Muscarella ME, Jones SE, Lennon JT (2013) Life in brown waters: Aquatic bacteria respond to increased terrestrial carbon loading. Midwest Ecology and Evolution Conference, South Bend, IN.

Lennon JT, **Muscarella ME**, Jones SE (2013) Bacteria and browning: implications of terrestrial carbon subsidies for aquatic ecosystems. American Society of Limnology and Oceanography, New Orleans, LA.

Muscarella ME, Jones SE, Lennon JT (2013) Life in brown waters: Aquatic bacterial responses to increased terrestrial carbon loading. American Society of Limnology and Oceanography, New Orleans, LA

Muscarella ME, Jones SE, Lennon JT (2012) Life in brown waters: Aquatic bacteria respond to increased terrestrial carbon loading. LTER All Scientists Meeting, Estes Park, CO.

Booth MG, Gifford S, Doherty M, **Muscarella M**, and Moran MA (2010) Expression of two carbon metabolism genes identified thorough transcriptomic analysis of estuarine bacterial communities of Sapelo Island, GA, U.S.A. International Society of Microbial Ecology Conference, Seattle, WA.

Doherty M, Poretsky R, **Muscarella ME**, Moran MA, Booth MG (2009) Tracking Metabolism of an Important Terrestrial Carbon Source by Marine Bacterioplankton. Coastal and Estuarine Research Federation 20th Biennial Conference. Portland, OR.

Muscarella M, Awong-Taylor J, Zettler J (2009) The Inability of Pathogenic and Nonpathogenic Strains of Escherichia coli to Survive in Coastal Beach Sand. 2009 Annual Conference of the Southeastern Branch American Society for Microbiology. Savannah, GA.

Muscarella M, Awong-Taylor J (2008) Role of Curli Fibers in the Adhesion of Escherichia coli O157:H7 to Bean Sprouts. American Society for Microbiology 108th Annual Meeting. Boston, MA.

Muscarella M, Awong-Taylor J, Zettler J (2008) The Potential for Pathogenic and non-pathogenic Escherichia coli to Survive in Beach Sand from Tybee Island, GA. Association of Southeastern Biologists 69th Annual Meeting. Spartanburg, SC.

Muscarella M, Awong-Taylor J (2008) A Method to Compare the Effectiveness of Different Washes on Removal Rates of E. coli from Plant Roots. Southern Regional Honors Council 36th Annual Conference. Birmingham, AL.

Griffiths L, Bass C, **Muscarella M**, Awong-Taylor J, Craven K (2006) Using Traditional and Molecular Techniques to Determine if Microbial Contamination Plays a Role in Embryonic Death of Loggerhead Sea Turtle Eggs. Florida Academy of Sciences 70th Annual Meeting. Melbourne, FL

ACADEMIC ADVISORS

Jay T. Lennon, Indiana University (Ph.D.)

Judy Awong-Taylor, Armstrong State University (B.S.)

MENTEES

Undergraduates:

Xia Meng Howey (*Indiana University* 2012 – 2014)

Rachel Ferrill (*Transylvania University* 2015)

Mollie Carrison (*Indiana University* 2015 – Present)

High School Students:

Nick Nelson (*Bishop Noll Institute, Hammond, IN* 2012)

Dakayla Calhoun (*Shortridge International Baccalaureate High School, Indianapolis, IN* 2015)