

**Rebekah Janet Ward**  
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## EDUCATION

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CORNELL UNIVERSITY, Department of Microbiology, Ithaca, NY  
**Doctor of Philosophy, Microbiology, Granted May 2009**, Minors: Biochemistry and Genetics

GEORGIA STATE UNIVERSITY, Atlanta, GA  
**Bachelor of Science – Biology, 2003**

## EXPERIENCE

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GEORGIA GWINNETT COLLEGE, Lawrenceville, GA 2013- present  
**Associate Professor**, promoted from Assistant Professor in 2019

- Taught diverse courses including Principles of Biology I and II, Genetics, Principles of Microbiology, Microbiology for Allied Health, Environmental Toxicology, Interdisciplinary Applications of Biology, and Bioinformatics.
- Mentored numerous students and part-time faculty
- Served as Faculty Senate Secretary for seven years.

GEORGIA GWINNETT COLLEGE, Lawrenceville, GA 2011- 2013  
**Biology Adjunct Instructor**

- Instructed diverse students in introductory biology for both majors and non-majors
- Innovated several inquiry driven in-class activities
- Developed a theme-based course for non-majors biology
- Designed two new laboratory exercises for introductory biology

THE ATLANTA SCHOOL, Atlanta GA 2010-2013  
**Science Curriculum Design and Instruction**

- Mentored elementary and middle school teachers in science instruction and curriculum design.
- Designed new lab space, purchased required materials and trained students and instructors on standard protocols.
- Directed lab and classroom instruction of fifth through ninth grade students.

MARINE BIOLOGICAL LABORATORIES, Woods Hole MA 2010-2011  
**Environmental Microbiology Course Coordinator and Mentor**

- Coordinated all guest speakers' visits and lecture needs.
- Ordered supplies and equipment for individual student projects and general laboratory needs
- Instructed students in transmission electron microscopy for visualization of viruses and bacteria
- Mentored the 2011 Course Coordinator in standard duties

EMORY UNIVERSITY, Department of Microbiology and Immunology 2008-2009

**Postdoctoral Fellow**

- Investigated the transcriptional cascade leading to the activation of  $\sigma^G$  during *B. subtilis* endospore formation using fluorescence microscopy of two-hybrid and fusion proteins
- Optimized new protocols for cryofixation for transmission electron microscopy in collaboration with Dr. Elizabeth Wright and Hong Yee

CORNELL UNIVERSITY, Department of Microbiology, Ithaca NY 2003-2008

**PhD Candidate**

- Developed a protocol for *in situ* detection of the nucleotide analogue bromodeoxyuridine (BrdU) for monitoring cell cycle progression in *Clostridium lentocellum*
- Carried out cryofixation, freeze substitution, and embedding for transmission electron microscopy on samples of *M. polyspora* and *Epulopiscium* sp.
- Partnered with Dr. Eugene Madsen on assessment of polycyclic aromatic hydrocarbon biodegradation in sediments.
- Completed metagenomic analysis and fluorescent *in situ* hybridization on gastrointestinal microbiota of the tropical reef fish *Pomacanthus sexstriatus*

**Co-Instructor, General Microbiology Lab** Fall 2007, 2003-2004

- Prepared and present pre-lab lectures
- Assisted students in proper laboratory techniques including microscopy, culturing, staining, isolation of unknowns, protein expression assays, DNA extraction and PCR

**Teaching Assistant, General Microbiology Lecture** Fall 2007, 2003-2004

- Developed activities and homework assignments
- Graded writing assignments, small group projects and exams

GEORGIA STATE UNIVERSITY 2002-2003

**Undergraduate Research Assistant, Department of Biology**

- Investigated a novel ORF in *Caenorhabditis elegans* that is homologous to the human Down Syndrome Cell Adhesion Molecule (DS-CAM) through *in situ* hybridization of mRNA

GEORGIA STATE UNIVERSITY 2001-2002

**Laboratory Technician, Department of Biology**

- Maintained supplies, media and glassware at appropriate levels
- Assisted with research on bacterial siderophores

**PUBLICATIONS**

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Ward, RJ, Allen, ME, Fernandes da Costa, S, Feld, HK, Clements, KD, Choat, JH, and ER Angert. *Analysis of the microbial community of Pomacanthus sexstriatus and implications for coral reef ecology*. In preparation.

Lawless, C, Zedonek, M, Curtis, D, Scharringhausen, J, Bryant, J, Dustman, W, Kurtz, L and RJWard. (2018) *Identification and Characterization of Nitrogen Fixing Bacteria Associated with Kudzu Root Nodules*. Georgia Journal of Science, 2018. Accepted.

Author of four chapters in Norman-McKay, L. (2018). *Microbiology: Basic and clinical principles*. New York, NY: Pearson.

Brown, C, Talley, J, Ward, RJ, Brandon, C, Penn, J, and E Javazon. (2017) Assessing Student Progress and Performance across the Curriculum: A Tool to Evaluate Program Success Quickly. *Proceedings of the Interdisciplinary STEM Teaching & Learning Conference*.

Pierce, K, A Kurtz, and RJ Ward. *Rhizofiltration of Lead Contaminated Soil by Helianthus annuus amended with Bacillus megaterium and EDTA*. Fine Focus Magazine, 2015. 1(2): p. 95-108

Brauer, S, Cadillo-Quiroz, H, Ward, RJ, Yavitt, J and S Zinder. *Methanoregula boonei gen. nov, sp. Nov, an acidophilic methanogen isolated from and acidic peat bog*. International Journal of Systematic and Evolutionary Microbiology, 2011. 61, p. 45-52.

Park, D, JA Finlay, RJ Ward, CJ Weinman, S Krishnan, M Paik, KE Sohn, ME Callow, DL Handlin, CL Willis, DA Fischer, ER Angert, EJ Kramer, and CK Ober. *Antimicrobial behavior of semifluorinated-quaternized triblock copolymers against airborne and marine microorganisms*. ACS Applied Material and Interfaces, 2010. 2(3): p. 703-11.

Ward, RJ, KD Clements, JH Choat and ER Angert. *The cytology of terminally differentiated Epulopiscium mother cells*. DNA and Cell Biology, 2009. 28(2): p. 57-64.

Ward, RJ and ER Angert. *DNA replication during endospore development in Metabacterium polyspora*. Molecular Microbiology, 2008. 67(6): p. 1360-1370.

Krishnan, S, RJ Ward, A Hexemer, KE Sohn, KL Lee, ER Angert, DA Fischer, EJ Kramer and CK Ober. *Surfaces of fluorinated pyridinium block copolymers with enhanced antibacterial activity*. Langmuir, 2006. 22(26); p. 11255-66.

## POSTERS AND PRESENTATIONS

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Darr, P, Ward, RJ, and W. Dustman (May 2018) *Preliminary Assessment of a Microbial Ecology Research Capstone for Gains in STEM Skills and Attitudes*. Poster Presentation at the GGC STEM symposium.

Cuello, C, Keller, S, Dustman, W, Kurtz, L, and RJ Ward. (April 2018) *Investigations into food safety in chicken eggs*. Oral presentation at CREATE Symposium, Lawrenceville GA.

Tran, N, Keller, S, Dustman, W, Kurtz, L, and RJ Ward. (April 2018) *Investigations of Salmonella and Listeria monocytogenes in Century Duck Eggs and Quail Eggs*. Oral presentation at CREATE Symposium, Lawrenceville GA.

Delgado, D, P. Sakaris, S. Keller, W. A. Dustman, A. M. Kurtz, and RJ Ward. (March 2018) *Variables Affecting Community Composition of Fish Gastrointestinal Microbial Flora*. Oral presentation at 79<sup>th</sup> Annual Meeting of the Association of Southeastern Biologists, Myrtle Beach, SC.

Darr, P, Ward, RJ, and W Dustman. (March 2018) *Preliminary Assessment of a Microbial Ecology Research Capstone for Gains in STEM Skills and Attitudes*. Poster at GGC Teaching and Learning Day

Delgado, D, Anwar, T. McCallister, S, Sakaris, P, Keller, S, Dustman, W, Kurtz, L, and RJ Ward. (December 2017) *Phylogenetic and functional analysis of the impact of water quality on fish gastrointestinal microbiota*. Oral presentation at CREATE Symposium, Lawrenceville GA.

Dillard, I, Sakaris, P, Keller, S, Dustman, W, Kurtz, L, and RJ Ward. (December 2017) *The role of Fusobacteria in fish digestion*. Oral presentation at CREATE Symposium, Lawrenceville GA.

Sifuentes, S, Donahue, K. Sakaris, S, Ward, RJ, Katzman, S. and E Javason. (December 2017) *Affects of water quality on the immune response in catfish*. Oral presentation at CREATE Symposium, Lawrenceville GA.

Brown, C. Talley, J, Ward, RJ, Brandon, C, Penn, J, and E Javazon. (March 2017). *Assessing Student Progress and Performance across the Curriculum: A Tool to Evaluate Program Success Quickly*. Oral presentation at Interdisciplinary STEM Teaching & Learning Conference, Savannah GA.

Ward, R, Shipman, S, and D Curry. (March 2017) *Writing Across the Curriculum for Senior Biology Students: a Case Study*. Oral presentation at Interdisciplinary STEM Teaching & Learning Conference, Savannah GA.

Darr, P, Ward, R, and W Dustman. (March 2017) *Preliminary Assessment of an Undergraduate Biology Capstone Course for Gains in Research Skills and Attitudes*. Oral presentation at Interdisciplinary STEM Teaching & Learning Conference, Savannah GA.

Azzolino, K, Witcher, B, Sakaris, P, Dustman, W, Kurtz, L, and RJ Ward. (December 2016) *Investigations into the gut microbiome of local fish*. Oral presentation at CREATE Symposium, Lawrenceville GA.

Darr, P, Ward, R, and W Dustman. (July 2016) *Microbes Rule! Using Microbial Communities to Foster Creative Collaborative Undergraduate Research Experiences and Promote STEM Competencies*. Oral presentation at ASMCUE, Bethesda MD.

Lawless, C, Zedonek, M, Curtis, D, Kurtz, L, and RJ Ward. (May 2016) *Unearthing Kudzu's nitrogen fixing partners*. Oral presentation at GGC STEM Symposium. Stone Mountain, GA.

Ward, RJ, Dustman, W, and P Darr. (May 2016) *Assessing student engagement in an inquiry driven biology capstone class*. Oral presentation at GGC STEM Symposium. Stone Mountain, GA.

Brown, C, Ward, RJ, and J Talley. (April 2016) *Assessing student outcomes using novel project based learning*. Oral presentation at Southeastern Association of Biologists. Chattanooga, TN.

Lawless, C, Zedonek, M, Curtis, D, Kurtz, L, and RJ Ward. (April 2016) *Characterization of enzymes associated with nitrogen fixing bacteria from Puereria montana nodules*. Oral presentation at Southeastern Association of Biologists. Concord, NC.

Zedonek, M, Curtis, D, Lawless, C., Abdullah, A, Kurtz, L, and RJ Ward. (April 2016) *Characterization of enzymes associated with nitrogen fixing bacteria from Puereria montana nodules*. Oral presentation at Southeastern Association of Biologists. Concord, NC.

Bryant, J. Murell, C, Kurtz, L, and RJ Ward. (April 2016) *NifD protein mutations and associated impact on nitrogen fixation*. Oral presentation at CREATE Symposium, Lawrenceville GA.

Lawless, C, Zedonek, M, Curtis, D, Kurtz, L, and RJ Ward. (November 2015) *Investigations into Nitrogen fixing bacteria associated with Puereria montana*. Oral presentation at Southeastern American Society of Microbiology, Birmingham, AL.

Brown, C, Talley, J, Ward, RJ, and C Brandon. (May, 2015) *An Innovative Method For Assessing Student Progress And Performance On The Biology Program Core Goals*. Oral presentation at SST STEM Symposium, Stone Mountain, GA.

Dustman, W, Kurtz, L, and RJ Ward. (April 2015) *Assessment of an inquiry driven microbiology module: Small World Initiative*. Oral presentation at Association of Southeastern Biologists, Chattanooga, TN.

Brown, C, Talley, J, Ward, RJ, and C. Brandon (April 2015) *Evaluation of collective grading methods for short answer format assessment*. Poster presentation at Association of Southeastern Biologists, Chattanooga, TN.

Dustman, W, Kurtz, L, and RJ Ward (April 2015) *Assessment of an inquiry driven microbiology module: Small World Initiative*. Oral presentation at the University System of Georgia Teaching and Learning Conference, Athens, GA.

Brown, C, Talley, J, Ward, RJ, and C Brandon. (February, 2015) *An Innovative Method For Assessing Student Progress And Performance On The Biology Program Core Goals*. Oral presentation at Governor's Teaching Fellowship Symposium, Athens, GA.

Dustman, W, Kurtz, L, and RJ Ward. (January 2015) *Assessment of an inquiry driven microbiology module: Small World Initiative*. Oral presentation at the SoTL Commons Conference, Savannah, GA.

Pearce, K, Kurtz, L, and RJ Ward. (September 2014) *Bioremediation potential for Bacillus megaterium amended soil with sunflowers*. Poster presentation at Emory STEM Symposium, Atlanta, GA.

Hurst-Kennedy, J, Talley, J, and RJ Ward. (April 2014) *Developing assessments for inquiry driven Genetics laboratory modules*. Poster presentation at Association of Southeastern Biologists, Greensboro, NC.

## FELLOWSHIPS AND AWARDS

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DNA AND CELL BIOLOGY 2009

- Young Scholar Award - highlight the research achievements of the next generation of scientists

CORNELL UNIVERSITY 2004

- Outstanding TA Award, CALS, Microbiology Department

## VOLUNTEERING

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CORNELL UNIVERSITY, Center for Learning and Teaching 2005-2006  
**Teaching Assistant Training Workshop Leader**

- Mentored new graduate students on teaching assistant skills
- Demonstrated sample teaching styles
- Provided guidance and feedback on videotaped practice teaching modules

CORNELL UNIVERSITY, The Microbial World 2006  
**Workshop Teaching Assistant**

- Assisted with a workshop for high school teachers to engage the teachers in microbiology and demonstrate lab projects that they can use in their classes to explore microbial diversity, genetics, symbiosis and microbial processes.

CORNELL UNIVERSITY, Expanding your Horizons Program 2006-2007  
**Workshop Leader**

- In collaboration with other graduate students, designed and taught an inquiry-based, hands-on, 2-hour workshop for young women in order to encourage women in science