

## **Ece Karatan**

Professor, Department of Biology, Appalachian State University  
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### **Education**

2000 Ph.D., Department of Biochemistry, University of Illinois at Urbana-Champaign, Urbana, IL.  
1996 M.S., Department of Biochemistry, University of Illinois at Urbana-Champaign, Urbana, IL.  
1993 B.S., Department of Molecular Biology and Genetics, Boğazici University, Istanbul, Turkey.

### **Professional experience**

2016-present Professor, Appalachian State University, Department of Biology, Boone, NC.  
2011-2016 Associate Professor, Appalachian State University, Department of Biology, Boone, NC.  
2005-2011 Assistant Professor, Appalachian State University, Department of Biology, Boone, NC.  
2003-2005 Postdoctoral researcher, Tufts-New England Medical Center, Boston, MA.  
2000-2003 Postdoctoral researcher, Argonne National Laboratory, Argonne, IL.

### **Administrative positions and experience**

**Biology Department Graduate Program Director (Interim: 2012-2013, Regular term: 2013-present)**

- Chairs the Graduate Studies Committee which carries out graduate admission and award decisions, and prepares policies and procedures related to the graduate program
- Corresponds with current and prospective students on all aspects of their graduate education
- Manages assistantship funds provided by the Graduate School and the College of Arts and Sciences
- Assigns assistantships to graduate students and manages all of the paperwork
- Manages communications with the Graduate School, current and prospective graduate students, and faculty regarding graduate education

### **Accomplishments in the position**

- Established the Walker Outstanding Biology Graduate Student Award; raised funds to give monetary support to the awardees
- Designed ASUlearn site as a repository for information about the program that faculty and students can access
- Initiated Featured Faculty, Featured Graduate Student, and Featured Alumni Web pages to market our program and to create networking opportunities
- Started a “New Graduate Students” booklet to introduce our incoming students to all the faculty, staff, and existing students
- Organized the Biology Graduate Program Open House to provide information about our program to our own undergraduates and to showcase the research being done in the department
- Initiated discussions in the Biology department towards establishing an Accelerated Admission MS program
- Prepared prioritization document with input from other members of the Graduate Studies Committee

## **Committees and Service**

### **Professional**

- Editorial Board Member, Scientific Reports, Nature Publishing (2016-present)
- Accuracy Reviewer for Microbiology, An Evolving Science 4<sup>th</sup> Ed. (Slonczewski and Foster, W. W. Norton & Company, 2016)
- NIH R15 – Grant Panel Member (2015, 2016, 2017)
- American Society of Microbiology North Carolina Branch (NC-ASM): Secretary (Dec. 2017-present; multi-year position), President (2014-2015; one-year position), President-Elect (2013-2014; one-year position), Councilor (2010-2015), Meeting Organizing Committee (2015-2016)
- Grant reviewer (Austrian Science Fund, Israeli Science Foundation, Biotechnology and Biological Sciences Research Council (BBSRC), United Kingdom, United States-Israel Binational Agricultural Research and Development Fund (BARD)) (2010-present)
- Manuscript reviewer (Molecular Microbiology, Journal of Dental Research, Trends in Biotechnology, Journal of Bacteriology, British Microbiology Research Journal, Biochimica, Biophysica, Acta, PLOS ONE, Journal of the Royal Society Interface, Future Microbiology, Current Medicinal Chemistry, International Journal of Environmental Research and Public Health, Biotechniques, BMC Research Notes, Biofilms and Microbiomes, PLOS Tropical Neglected Diseases) (2007-present)
- Abstract reviewer, BioMicroWorld Conference (2009-2011)
- Awards judge for presentations at NC-ASM Regional conferences (2008-present)
- Abstract Reviewer, Annual Biomedical Research Conference for Minority Students, (2008-2010)

### **College and University**

- Graduate School Dean Search Committee (2017-2018)
- Global Engagement Council, International Student Recruitment, Retention, Alumni subcommittee (2017-present)
- Graduate AP&P Committee (2017-2020)
- Graduate Assistantships Reallocation Focus Group (2017)
- Graduate School Award Selection Committee (2017)
- College of Arts and Sciences Dean Search Committee, Co-chair (2016-2017)
- Awards Judge for Appalachian State University Research Day (2013-2016)
- Fulbright Student Interview Committee (2012)
- Institutional Biosafety Council (2010-present)
- Donald Sink Scholarship Award Committee (2009-2010)

### **Departmental**

- Graduate Studies Committee (2006-2012)
- Search committees (Plant Molecular Biology (2005-2006), Microbiology, Co-chair (2009-2010), Genetics (2013-2014), Molecular Biology, Chair (2014-2015), Molecular Biology and Microbiology Lab Supervisor (2015))
- Curriculum Reform Committee (Genetics, Molecular Biology, Microbiology subcommittee, 2005-2007)
- DPC (2006-2007, 2009-2010, 2012-2013, 2016-2017)
- Strategic Planning Committee (2009-2010, 2016-present)

- Scholarship Committee (2006-2009)
- Capstone Committee (2011-2014)
- Post-tenure review committee (2014-2015)
- Biosafety Committee (2014-2015)
- Internship Committee (2015-2016)
- Budget Committee (2014-2016)
- PTC (2014-present)
- Assessment (2016-2017)

### **Awards, Nominations, and Honors**

- 2018** Distinguished Graduate Faculty Award nomination (Not awarded)
- 2017** Donald Sink Outstanding Scholar Award nomination (Not awarded)
- 2017** Selected as one of three “Key Research Initiatives” showcased at Board of Governor’s Meeting
- 2017** Appalachian's Most Helpful Faculty and Staff
- 2016** Inducted into the Appalachian State University Cratis D. Williams School of Graduate Studies Academy of Outstanding Mentors
- 2013-13** Richard Henson Outstanding Advisor Award Nomination (Not awarded)
- 2011-12** Richard Henson Outstanding Advisor Award Nomination (Not awarded)

### **Professional Development Activities**

- 2017** BRIDGES Academic Leadership for Women Program

### **Memberships**

- 2005-** American Society of Microbiology North Carolina Branch
- 2005-2014** Sigma Xi
- 2003-** American Society of Microbiology

### **Research Grants Received**

- 2016** NIH-NIAID, R15, *Polyamine-dependent regulation of biofilm formation*, \$395,720 (Role: PI)
- 2011** NIH-NIAID, R15, *Polyamine-dependent regulation of biofilm formation*, \$397,090 (Role: PI)
- 2008** Appalachian State University Research Council (URC) Award, *Effect of Polyamine Synthesis and Transport on Vibrio cholerae Biofilm Formation*, \$4833 (Role: PI)
- 2007** Appalachian State University Research Council (URC) Award, *Role of MbaA in Vibrio cholerae biofilm formation*, \$4392 (Role: PI)
- 2006** Merck-AAAS Institutional grant From Molecules to Organisms: The Merck/AAAS Cross-Disciplinary Scholars program at Appalachian State University, \$60,000 (Role : Co-PI ,along with Dr. Claudia Cartaya-Marin, PI: Niki Bennet)
- 2005** Appalachian State University Research Council (URC) Award, *Elucidating environmental signals and cellular networks controlling biofilm formation in the aquatic bacterium Vibrio cholerae*, \$4,640 (Role: PI)

**2004** Natalie V. Zucker Postdoctoral Research Award, Tufts University Medical School, \$2,000 (Role: PI)

### **Publications**

1. Wotanis, C.K., Brennan, W.P. 3rd, Angotti, A.D., Villa, E.A., Zayner, J.P., Mozina, A.N., Rutkovsky, A.C., Sobe, R.C., Bond, W.G., Karatan, E. (2017) Relative contributions of norspermidine synthesis and signaling pathways to the regulation of *Vibrio cholerae* biofilm formation. PLoS One. Oct 18;12(10):e0186291. doi: 10.1371/journal.pone.0186291
2. Sobe, R.C., Bond, W.G., Wotanis, C.K., Zayner, J.P., Burriss, M.A., Fernandez, N., Bruger, E.L., Waters, C.M., Neufeld, H.S., and Karatan, E. (2017) Spermine inhibits *Vibrio cholerae* biofilm formation through the NspS-MbaA polyamine signaling pathway. J Biol Chem. Oct 13;292(41):17025-17036 doi: 10.1074/jbc.M117.801068
3. Cockerell, S.R., Rutkovsky, A.C., Zayner, J.P., Cooper, R.E., Porter, L.R., Pendergraft, S.S., Parker, Z.M., McGinnis, M.W., Karatan, E. (2014) *Vibrio cholerae* NspS, a homologue of ABC-type periplasmic solute binding proteins, facilitates transduction of polyamine signals independent of their transport. Microbiology 160 (Pt5): 832-43 PMID:PMC3992718
4. Goforth, J.B., Walter, N.E., Karatan, E. Effects of polyamines on *Vibrio cholerae* virulence properties. (2013) PLoS ONE Apr 10;8(4):e60765. doi: 10.1371/journal.pone.0060765
5. Parker, Z.M., Pendergraft, S.S., Sobieraj, J., McGinnis, M.M., Karatan, E. 2012 Elevated levels of the norspermidine synthesis enzyme NspC enhance *Vibrio cholerae* biofilm formation without affecting intracellular norspermidine concentrations FEMS Microbiol Lett Apr;329(1):18-27. doi: 10.1111/j.1574-6968.2012.02498.x.
6. Johnson, K.W., McDonald, W., Carmichael, M.J., Pitchford, J., Windelspecht, M., Karatan, E., and Brauer, S.L. 2012 Increased abundance of *Gallionella* spp., *Leptothrix* spp., and total bacteria in response to enhanced Mn and Fe concentrations in a disturbed southern Appalachian high elevation wetland. Geomicrobio. 2012, 29(2):124-138
7. McGinnis, M., Parker, ZM, Walter, NE, Rutkovsky, AC, Cartaya-Marin C, Karatan, E. 2009. Spermidine regulates *Vibrio cholerae* biofilm formation via transport and signaling pathways. FEMS Microbiol Lett., 2009 Oct;299(2):166-74
8. Karatan, E., and P. Watnick. 2009. Signals, regulatory networks, and materials that build and break bacterial biofilms. Microbiol Mol Biol Rev 73 (2):310-47. PMID: PMC2698413
9. Karatan, E., Duncan, T., Watnick PI. 2005. NspS, a predicted polyamine sensor, mediates activation of *Vibrio cholerae* biofilm formation by norspermidine J. Bacteriol. 2005 187(21):7434-43.
10. Kapfhammer D., Karatan, E., Pflughoeft K.J., Watnick P.I. 2005. Role for glycine betaine transport in *Vibrio cholerae* osmoadaptation and biofilm formation within microbial communities. Appl. Environ. Microbiol. Jul; 71(7):3840-7.
11. Kwon Y., Han Z., Karatan, E., Mrksich M., Kay B.K. 2004. Antibody Arrays Prepared by Cutinase-Mediated Immobilization on Self-Assembled Monolayers. 2004. Anal. Chem. Oct 1;76(19):5713-20.
12. Karatan, E., Merguerian M., Han Z., Scholle MD., Koide S., Kay BK. 2004. Molecular Recognition Properties of FN3 Monobodies that Bind the Src SH3 Domain. Chem. Biol. Jun;11(6):835-44
13. Han Z., Karatan, E., Scholle MD., McCafferty J., Kay BK. 2004 Accelerated Screening of Phage-Display Output with Alkaline Phosphatase Fusions. Comb. Chem. High Throughput Screen. Feb; 7 (1): 55-62

14. Saulmon, M.M., Karatan, E., Ordal, G.W. 2004. Effect of Loss of CheC and Other Adaptational Proteins on Chemotactic Behaviour in *Bacillus subtilis*. *Microbiology*; (150): 581-589
15. Karatan, E., Saulmon, M.M., Bunn, M.W., Ordal G.W. 2001. Phosphorylation of CheV is Involved in Adaptation to Excitatory Signals in *Bacillus subtilis* *Chemotaxis J. Biol. Chem.* Nov. 23; 276 (47): 43618-43626
16. Hou, S., Larsen, R., Boudko, D., Riley, C., Karatan, E., Zimmer, M., Ordal G.W., Alam, M. 2000. Myoglobin-like Aerotaxis Transducers in Archea and Bacteria *Nature* Feb 3; 403 : 540-4
17. Charmley, P., Karatan E\*, Snyder, K., Clark, E.A., Concannon P. 1995. Relative Size and Evolution of the Germline Repertoire of T-cell Receptor Beta-chain Gene Segments in Nonhuman Primates. *Genomics* Jan 1; 25(1): 150-6  
\*Misspelled as “Keretan”

### **Book chapters and other non-refereed publications**

1. Karatan, E., Michael, A.J. 2013 A wider role for polyamines in biofilm formation *Biotechnol Lett.* Nov;35(11):1715-7. doi: 10.1007/s10529-013-1286-3. (Letter to editor)
2. Kierek-Pearson, K. and Karatan, E. Biofilm Development in Bacteria. 2005. In: *Advances in Applied Microbiology*, Laskin, AI., Bennett, JW., and Gadd, MG. (Ed) Elsevier Inc. Vol. 57 pp. 79-112
3. Karatan, E., Han, Z, and Kay, B.K. 2005 Molecular display technologies. In: *Encyclopedia of Molecular Biology and Medicine*. Meyers, RA. (Ed.) WILEY-VCH 8, 409-420.
4. Han, Z., Karatan, E., and Kay, B.K. 2005 Protein interaction networks. In: *Phage Display in Biotechnology and Drug Discovery*, Sidhu, S.S. (ed). CRC Press, Baton Rouge, FL. pp. 321-346. (2<sup>nd</sup> edition, 2015, pp.229-249)

### **Invited Presentations**

- Wesleyan University, Department of Chemistry and Department of Biology, July 2017, *Vibrio cholerae* Biofilm Formation
- Rotary Club of Boone. December 2016, Cholera.
- Virginia Tech, Department of Biological Sciences, November 2016, Regulation of *Vibrio cholerae* Biofilm Formation by Polyamines
- Gordon Research Conference, June 2015, Norspermidine Is an Extracellular Signal that Activates *Vibrio cholerae* Biofilm Formation
- North Carolina National Association of Science Writers Conference, October, 2012, Polyamines and *Vibrio cholerae* Biofilms
- Science in the Mountains, April 2013, Regulation of *Vibrio cholerae* Biofilm Formation
- Western Carolina University, Department of Biology, April, 2011, Effect of Polyamines on *Vibrio cholerae* Biofilm Formation and Virulence
- Wake Forest University, Department of Microbiology and Immunology, June, 2010. Effect of Polyamines on *Vibrio cholerae* Biofilm Formation
- Eastern Carolina University, Department of Microbiology and Immunology June, 2008, Effect of Polyamines on *Vibrio cholerae* Biofilm Formation
- Sigma-Xi local chapter meeting, Boone, NC. ,March, 2007, Signal Transduction in *Vibrio cholerae* biofilms
- Science in the Mountains, April, 2006, Signal Transduction in *Vibrio cholerae* biofilms.

**Abstracts for symposia presentations (since Fall 2005)****National and International Meetings**

- Bond, W\*. and Karatan, E. Characterizing the Domains of the Phosphodiesterase MbaA in *Vibrio cholerae* Microbe Meeting., Atlanta, GA. June 7-11, 2018. (Selected for Rapid Fire presentation, \* Presenter)
- Bonds, G., Zerucha, T., and Karatan, E. The effects of biofilm formation on *Vibrio cholerae* colonization in zebrafish. Microbe Meeting., Atlanta, GA. June 7-11, 2018
- Young, E., Sobe, R., and Karatan, E. Identification of the Binding Interface between NspS and MbaA in *Vibrio cholerae*. Microbe Meeting., Atlanta, GA. June 7-11, 2018.
- Bond, W. and Karatan, E. Characterizing the Domains of the Phosphodiesterase MbaA in *Vibrio cholerae*, Wind River Conference on Prokaryotic Biology, Estes Park, CO. June 14-17, 2017.
- Wotanis, C. and Karatan, E. The role of SpeG in *Vibrio cholerae* biofilm formation. Wind River Conference on Prokaryotic Biology, Estes Park, CO. June 14-17, 2017.
- Sobe, RC., Zayner, JP., and Karatan, E. A polyamine-mediated signaling system controls *Vibrio cholerae* biofilm formation: A new small molecule signaling paradigm? Wind River Conference on Prokaryotic Biology, Estes Park, CO. June 14-17, 2017.
- Sobe, R., Zayner, JP., Bruger, E, Waters, C., and Karatan, E. Conserved binding pocket residues in the periplasmic binding protein, NspS, influence polyamine signaling and biofilm formation in *Vibrio cholerae*. American Society for Microbiology General Meeting, Boston, MA. June 16-20, 2016.
- Villa, E., Sanders, BE, Wotanis, CK., Rutkovsky, AC., and Karatan, E. Characterization of the norspermidine-preferential ABC-type transporter PotABCD1 in *Vibrio cholerae*. American Society for Microbiology General Meeting, Boston, MA. June 16-20, 2016.
- Sobe, R. and Karatan, E. Regulation of polyamine-mediated biofilm formation by NspS and MbaA in *Vibrio cholerae*. American Society for Microbiology General Meeting, New Orleans, LA. May 30- June 2, 2015.
- Sanders, BE., Villa, E, and Karatan, E. Characterization of the PotABCD2D1 Transport System in *Vibrio cholerae*. American Society for Microbiology General Meeting, New Orleans, LA. May 30- June 2, 2015.
- Brennan, W. and Karatan, E. Regulation of *Vibrio cholerae* Biofilm formation and norspermidine synthesis by iron. American Society for Microbiology General Meeting, New Orleans, LA. May 30- June 2, 2015.
- Angotti, A. and Karatan, E. Vibriobactin-mediated biofilm formation in *Vibrio cholerae*, American Society for Microbiology General Meeting. Denver, CO. May 18-20, 2013.
- Cockerell, SR., Pendergraft, SS. and Karatan, E. Norspermidine-responsive biofilm formation in *Vibrio cholerae*, American Society for Microbiology General Meeting. Denver, CO. May 18-20, 2013.
- Rutkovsky, Alex. And Karatan, E. PotD1 Protein Function in *Vibrio cholerae*, American Society for Microbiology General Meeting. San Francisco, CA. June 16-18, 2012.
- Pendergraft, S. , Zayner, J., Porter, L. Cockerell, R. Rutkovsky, A. Karatan, E. Distribution of *Vibrio cholerae* NspS and MbaA homologs in diverse Proteobacteria. ASM American Society for Microbiology General Meeting. San Francisco, CA. June 16-18, 2012.
- Goforth, B. Walter, N., Karatan, E. Effect of Polyamines on *Vibrio cholerae* Virulence Properties American Society for Microbiology General Meeting. San Francisco, CA. June 16-18, 2012.

- Rutkovsky, A. and Karatan, E. PotD1 Protein Function in *Vibrio cholerae*, American Society for Microbiology General Meeting. New Orleans, LA. May 21-24, 2011.
- Pendergraft, S. Parker, Z, McGinnis, M, Karatan, E. Effect of *nspC* Gene Expression on *Vibrio cholerae* Biofilm Formation ASM American Society for Microbiology General Meeting. New Orleans, LA. May 21-24, 2011.
- Goforth, B. Porter, L, Karatan, E. VC0702 Plays a Role in *Vibrio cholerae* Biofilm Formation American Society for Microbiology General Meeting. New Orleans, LA. May 21-24, 2011.
- Cooper, R.E. and Karatan, E. NspS, a PotD1 homolog, functions as a spermidine signal sensor, not a transporter, in *Vibrio cholerae* American Society for Microbiology General Meeting, San Diego, CA. May, 2010.
- Karatan, E., McGinnis, M., Parker, Z., Walter, N., Rutkovsky, A., Spermidine represses *Vibrio cholerae* biofilm formation via import and signaling systems. American Society for Microbiology General Meeting, Philadelphia, PA. June, 2009.
- McGinnis, M.W., and Karatan, E. Effects of Polyamines on *Vibrio cholerae* Biofilm Formation. American Society for Microbiology General Meeting, Boston, MA. June 1-5, 2008.
- Zayner, J., McGinnis, M.W., Karatan, E. Regulation of *Vibrio cholerae* Biofilms by NspS and MbaA. American Society for Microbiology General Meeting, Boston, MA. June 1-5, 2008.
- Zayner, J., Adams, M.R., Marino, J. and Karatan, E. Regulation of *Vibrio cholerae* biofilm by MbaA and NspS. Gordon Research Conference (Microbial Signaling and Cell Adhesion) Newport, RI. June 22-28, 2007.

### **Regional Meetings**

- Bond, W. and Karatan, E. Characterizing the Domains of the Phosphodiesterase MbaA in *Vibrio cholerae*, American Society for Microbiology Regional Meeting, Raleigh, NC. October 20, 2017.
- Wotanis, C., Villa, E., Brennan, W., Angotti, A., Rutkovsky, A., Mozina, A., and Karatan, E. Relative contributions of norspermidine synthesis, transport, and signaling on the regulation of biofilm formation in *Vibrio cholerae*. Mid-Atlantic Microbial Pathogenesis Meeting, Wintergreen, VA. February 13, 2017.
- Sobe, R., Bond, W., Wotanis, C., Burriss, M., and Karatan, E. Spermine inhibits *Vibrio cholerae* biofilm formation through the NspS-MbaA signaling pathway. Mid-Atlantic Microbial Pathogenesis Meeting, Wintergreen, VA. February 12-14, 2017.
- Sobe, R\*. and Karatan, E. Spermine is an inhibitor of *Vibrio cholerae* biofilm formation. American Society for Microbiology Regional Meeting, Wilmington, NC. October 1, 2016. (Platform presentation, \*Presenter)
- Isenhower, JM and Karatan, E. Identifying the role of putrescine biosynthesis and transport in *Vibrio cholerae* biofilm formation. American Society for Microbiology Regional Meeting, Wilmington, NC. October 1, 2016.
- Wotanis, C., Villa, E., Sanders, B., Isenhower, J., Sobe, R., Rutkovsky, A., Mozina, A., and Karatan, E. Interplay between polyamine synthesis, signaling, and transport on regulating biofilm formation in *Vibrio cholerae*. American Society for Microbiology Regional Meeting, Wilmington, NC. October 1, 2016.
- Sobe, R. and Karatan, E. Conserved binding pocket residues in the periplasmic binding protein, NspS, influence polyamine signaling and biofilm formation in *Vibrio cholerae*. American Society for Microbiology Regional Meeting, Raleigh, NC. October 3, 2015.

- Villa, E., Sanders, BE. Sobe, R., Rutkovsky, A., and Karatan, E. Characterization of the norspermidine/spermidine ABC-type transporter PotABCD1 in *Vibrio cholerae*. American Society for Microbiology Regional Meeting, Raleigh, NC. October 3, 2015.
- Sobe, R. and Karatan, E. Regulation of polyamine-mediated biofilm formation by NspS and MbaA in *Vibrio cholerae*. Mid-Atlantic Pathogenesis Meeting, Wintergreen, VA., January 25-27, 2015.
- Sanders, BE., Villa, E, and Karatan, E. Characterization of the PotABCD2D1 Transport System in *Vibrio cholerae*. Mid-Atlantic Pathogenesis Meeting, Wintergreen, VA., January 25-27, 2015.
- Brennan, W. and Karatan, E. Iron-mediated biofilm formation in *Vibrio cholerae*. Mid-Atlantic Pathogenesis Meeting, Wintergreen, VA., January 25-27, 2015.
- Sobe, R. and Karatan, E. Regulation of polyamine-mediated biofilm formation by NspS and MbaA in *Vibrio cholerae*. American Society for Microbiology Regional Meeting, Boone, NC. September 27, 2014.
- Sanders, BE., Villa, E, and Karatan, E. Characterization of the PotABCD2D1 Transport System in *Vibrio cholerae*. American Society for Microbiology Regional Meeting, Boone, NC. September 27, 2014.
- Brennan, W. and Karatan, E. Iron-mediated biofilm formation in *Vibrio cholerae*. American Society for Microbiology Regional Meeting, Boone, NC. September 27, 2014.
- Angotti, A., Karatan, E. Vibriobactin Mediated Biofilm Formation in *V. cholerae*. American Society for Microbiology Regional Meeting, Raleigh, NC. October 6, 2012.
- Cockerell, SR., Pendergraft, SP., Karatan, E. Norspermidine-responsive Biofilm Development in *V. cholerae*. American Society for Microbiology Regional Meeting, Raleigh, NC. October 6, 2012.
- Rutkovsky, A. Karatan, E. Characterization of the PotD1 Protein in *Vibrio cholerae*. American Society for Microbiology Regional Meeting, Asheville, NC. October 8, 2011.
- Goforth, B., Walter, N. Karatan, E. Effect of Polyamines on *Vibrio cholerae* Virulence Properties. American Society for Microbiology Regional Meeting, Asheville, NC. October 8, 2011.
- Johnson, K., Windelspecht, M., Brauer, S., Karatan, E. Assessing Bacterial Diversity in High Altitude Wetlands Disturbed by Iron and Manganese. American Society for Microbiology Regional Meeting, Greensboro, NC. October 10, 2008.
- Walter, N., Rutkovsky, A., Karatan, E., Cartaya-Marin, C. Elucidation of Polyamine Transport and Synthesis Mechanisms in *Vibrio cholerae*. American Society for Microbiology Regional Meeting, Greensboro, NC. October 10, 2008.
- Parker, Z. McGinnis, M.W., Karatan, E. Quantification of Polyamines in *nspC* overexpression mutants in *Vibrio cholerae*. American Society for Microbiology Regional Meeting, Greensboro, NC. October 10, 2008.
- Marino, J.M., Adams, M.R., Karatan, E., Cartaya-Marin, C.P. A study toward the synthesis of 3',5'-cyclic diguanylic acid and its biological relevance in *Vibrio cholerae*. 59<sup>th</sup> Annual Southeastern Regional Meeting of the American Chemical Society, Greenville, SC. Oct. 2007.
- McGinnis, M. and Karatan, E. Determining the function of the PotD proteins in *Vibrio cholerae*, American Society for Microbiology Regional Meeting, Greensboro, NC. Oct.12, 2007.
- Zayner, J., Adams, M.R., Marino, J. and Karatan, E. Regulation of *Vibrio cholerae* biofilm by MbaA and NspS. American Society for Microbiology Regional Meeting, Greensboro, NC. Oct.12, 2007.
- Zayner, J. and Karatan, E. Regulation of Biofilm in *Vibrio cholerae* by NspS. Association of Southeastern Biologists, Columbia, SC. April 18-21, 2007.
- Pitchford, J\*, Greco T, Karatan E., Windelspecht M. March 29-April 1, 2006, Influence of metal pollution and concurrent biofilm production on benthic macroinvertebrates in a disturbed high



elevation wetland. American Society of Biologists, 67<sup>th</sup> Annual Meeting, Gatlinburg, TN. March 29-April 1, 2006 (Platform presentation, \*Presenter)

### **Thesis committees (completed)**

#### **Chair/Co-chair**

##### Graduate:

1. Fall 2005-Fall 2007 Co-chair, master's thesis, Jonathan Pitchford (Current position: Wildlife ecologist at the Institute of Marine Mammal Studies)
2. Fall 2006-Spring 2008 Chair, master's thesis, Josiah Zayner (Current position: PhD from University of Chicago, postdoc at NASA, CEO and Founder of ODIN-Open Discovery Institute)
3. Spring 2006-Fall 2008 Chair, master's thesis, Marcus McGinnis (Current position: Research Associate with Dr. Emmet O'Brien, Acute Lung Injury Center for Excellence, University of Pittsburgh Medical Center)
4. Fall 2007-Summer 2009 Chair, master's thesis, Kristin (Walls) Johnson (Current position: Instructional Designer and Biology Subject Matter Expert for McGraw Hill Higher Education)
5. Fall 2007-Summer 2009 Chair, master's thesis, Lindsay Porter (Current position: Biology teacher, The Paideia School, Atlanta, and a CDC Science Fellow)
6. Spring 2008-Summer 2009 Chair, master's thesis, Zach Parker (PhD from Dartmouth, currently, postdoc at University of Chicago)
7. Fall 2008-Summer 2010 Chair, master's thesis, Becca Cooper (PhD from Georgia Tech, currently, postdoc in Jena University, Germany)
8. Fall 2010-Spring 2012 Chair, master's thesis, Alex Rutkovsky (Current position: PhD program in Medical University of South Carolina)
9. Fall 2010- Spring 2012 Chair, master's thesis, Brad Goforth (Doctor of Osteopathic Medicine from Campbell University, currently OBGYN resident at Mt. Sinai Hospital, Baltimore)
10. Fall 2010-Spring 2012 Chair, master's thesis, Sam Pendergraft (PhD from Wake Forest University, currently, PA program in Wake Forest)
11. Fall 2011-Summer 2013 Chair, master's thesis, Randy Cockerell (Current position: Laboratory Manager, Appalachian State University, Department of Biology)
12. Fall 2011-Summer 2013 Chair, master's thesis, Tony Angotti (Current position: Quality Assurance Specialist Cook Myosite)
13. Fall 2013-Summer 2015 Chair, master's thesis, Blake Edwards (Current position: PhD program at Virginia Tech)
14. Fall 2013-Summer 2015 Chair, master's thesis, Will Brennan (Current position: Research Scientist, Innovata, NC)
15. Fall 2013- Fall 2015 Chair, master's thesis, Richard Sobe (Current position: PhD program at Virginia Tech)
16. Fall 2014- Summer 2016 Co-chair, master's thesis, Libby Villa (Current position: PhD program at the University of Georgia)
17. Fall 2015-Fall 2016 Chair, master's thesis, Jada Isenhower (Current position: Research

18. Fall 2015-Summer 2017 associate, with Dr. Ruksana Huda, University of Texas Medical, Department of Microbiology and Immunology)  
Chair, master's thesis, Caitlin Wotanis (Current position: Research Associate at the Genomics Core Facility at North Carolina State University)

Undergraduate:

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|--------------------------|---|
| 1. Fall 2009-Spring 2010 | Chair, University Honors thesis, Sam Pendergraft      |
| 2. Fall 2010-Spring 2011 | Chair, Biology Honors thesis, Nick Walter             |
| 3. Fall 2012-Spring 2013 | Co-Chair, University Honors thesis, Christina Daly    |
| 4. Fall 2014-Spring 2016 | Chair, University Honors, Marybeth Burriss            |
| 5. Fall 2017-Spring 2018 | Chair, University and Biology honors, Mackenzie Brown |

**Member**Graduate:

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| 1. Fall 2007-Fall 2009      | Member, master's thesis, Brantley Graham      |
| 6. Fall 2010-Spring 2012    | Member, master's thesis, Mary Jane Carmichael |
| 7. Summer 2013-Summer 2014  | Member, master's thesis, Ashley Hawkins       |
| 8. Summer 2014-Summer 2015  | Member, master's thesis, Bryan Zorn           |
| 9. Fall 2011-Summer 2013    | Member, master's thesis, Cody Barrett         |
| 10. Spring 2011-Summer 2014 | Member, master's thesis, Zach Williams        |
| 11. Spring 2011- Fall 2017  | Member, masters thesis, Ali Deshields         |
| 12. Spring 2014-Summer 2015 | Member, master's thesis, Tyler Ferrera        |
| 13. Spring 2014-Fall 2015   | Member, master's thesis, Hannah Freundlich    |
| 14. Spring 2014-Summer 2016 | Member, master's thesis, Brandon Smith        |
| 15. Spring 2015-Summer 2017 | Member, master's thesis, Amber Dyson          |
| 16. Fall 2015-Summer 2017   | Member, master's thesis, Paul Freeman         |

Undergraduate:

- |                          |  |
|--------------------------|--|
| 1. Fall 2011-Spring 2012 | Member, Chemistry and University honors thesis, Jared Harris |
| 2. Fall 2012-Spring 2013 | Member, Chemistry senior Honors, Kaitlin Rzasa               |
| 3. Fall 2012-Spring 2013 | Member, Chemistry senior Honors, Shea Comadoll               |

**Senior Capstone Research (completed)**

- |                |                   |
|----------------|-------------------|
| 1. Fall 2012   | Allison Gardzalla |
| 2. Spring 2012 | Jacob Hoyle       |
| 3. Spring 2012 | Richard Sobe      |
| 4. Spring 2013 | Adana Campbell    |
| 5. Spring 2017 | Matthew Bujold    |
| 6. Spring 2018 | Grayson Barker    |
| 7. Spring 2018 | Melanie Robinson  |

**Thesis committees (current)****Chair:**Graduate:

- |               |                                      |
|---------------|--------------------------------------|
| 1. Fall 2016- | Chair, master's thesis, Whitney Bond |
| 2. Fall 2017- | Chair, master's thesis, Erin Young   |

3. Fall 2017- Co-Chair, master's thesis, Garett Bonds

**Member:**

1. Spring 2017- Member, master's thesis, Sandipty Kayastha

2. Spring 2018- Member, master's thesis, Adam Willits

**Outreach:**

April 2012-2015 ASU science expo, participant. Helped organize a "Microbiology Exhibit" along with Drs. Ahmed and Brauer.

Oct. 2012 Lunch with a Scientist, Raleigh, NC. Invited speaker.

**Course development**

Bio 3308 Microbiology Lecture

Bio 3308 Microbiology Labs

Bio 5710 Genomics

Bio 4375 Bacterial Pathogenesis

Bio 6615 Current Topics in Molecular Biology