

## ADRIANNE NEHRLING EDWARDS, Ph.D.

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### CURRICULUM VITAE

#### **EDUCATION**

Ph.D., Microbiology and Molecular Genetics, Emory University, Atlanta, GA, October 2010

Dissertation Advisor: Dr. Tony Romeo

Dissertation: Determination of the Global Regulatory Role of RNA Binding Protein CsrA

B.S., Genetics, *cum laude* with Honors, University of Georgia, Athens, GA, May 2004

Undergraduate Thesis Advisor: Dr. Sidney Kushner

Undergraduate Thesis: Characterization of *Escherichia coli* K-12 Strains Deficient in Polynucleotide Phosphorylase and Ribonuclease II

#### **RESEARCH EXPERIENCE**

July 2012 – Present

Dr. Shonna McBride, Emory University, Atlanta, GA

Project: Regulation of sporulation initiation in *Clostridium difficile*

Dec. 2010 – June 2012

Dr. Justin Gallivan, Emory University, Atlanta, GA

Project: In vitro and in vivo selection of a novel aptamer and riboswitch that recognizes the neurotoxin paraoxon, and characterization of the function of synthetic theophylline riboswitches in various phases of growth in *Escherichia coli*

Sept. 2005 – Nov. 2010

Dr. Tony Romeo, Emory University, Atlanta, GA

Project: Determination of the global regulatory role of the RNA binding protein CsrA in *Escherichia coli* and *Salmonella* Typhimurium

Jan. – May 2005

Dr. Harry Mobley, University of Michigan, Ann Arbor, MI

Project: Cloning and characterization of *flhDC* in *Proteus mirabilis*

Sept. – Dec. 2004

Dr. Victor DiRita, University of Michigan, Ann Arbor, MI

Project: Characterization of CdtABC secretion in *Campylobacter jejuni*

Jun. 2002 – Aug. 2004

Dr. Sidney Kushner, University of Georgia, Athens, GA

Project: Determination of the roles of polynucleotide phosphorylase and ribonuclease II in mRNA decay in *Escherichia coli*

**RESEARCH PUBLICATIONS**

**Edwards, A. N.**, R. A. Pascual, K. O. Childress, K. L. Nawrocki, E. C. Woods and S. M. McBride. (2015) An Alkaline Phosphatase Reporter for use in *Clostridium difficile*. *Anaerobe*. In Press.

**Edwards, A. N.**, K. L. Nawrocki and S. M. McBride. (2014) Conserved Oligopeptide Permeases Modulate Sporulation Initiation in *Clostridium difficile*. *Infect and Immun*. 82: 4276-4291.

**Edwards, A. N.**, Suárez, J. M., and S. M. McBride. (2013) Culturing and Maintaining *Clostridium difficile* in an Anaerobic Environment. *J. Vis. Exp.* (79) e50787.

\*Suárez, J. M., \***Edwards, A. N.**, and S. M. McBride. (2013) The *Clostridium difficile* *cpr* Locus is Regulated by a Non-contiguous Two-Component System in Response to Type A and B Lantibiotics. *J. Bacteriol.* 195:2621-31. (\*authors contributed equally to this work)

Pannuri, A., Yahknin, H., Vakulskas, C. A., **Edwards, A. N.**, Babitzke, P., and T. Romeo. (2012) Translational repression of NhaR, a Novel Pathway for Multi-tier Regulation of Biofilm Circuitry by CsrA. *J. Bacteriol.* 194:79-89.

**Edwards, A. N.**, Patterson-Fortin, L. M., Vakulskas, C. A., Mercante, J. W., Potrykus, K., Vinella, D., Camacho, M. I., Fields, J. A., Thompson, S. A., Georgellis, D., Cashel, M., Babitzke, P., and T. Romeo. (2011) Circuitry Linking the Csr system and Stringent Response Global Regulatory Systems. *Mol Microbiol.* 80:1561-1580.

Irie, Y., Starkey, M., **Edwards, A. N.**, Wozniak, D. J., Romeo, T., and M. R. Parsek. (2010) *Pseudomonas aeruginosa* biofilm matrix polysaccharide Psl is regulated transcriptionally by RpoS and post-transcriptionally by RsmA. *Mol Microbiol.* 78:158-72.

Jonas, K., **Edwards, A. N.**, Ahmad, I., Romeo, T., Römling U, and O. Melefors. (2010) Complex regulatory network encompassing the Csr, c-di-GMP and motility systems of *Salmonella* Typhimurium. *Environ Microbiol.* 12:524-40.

Mercante, J., **Edwards, A. N.**, Dubey, A. K., Babitzke P, and T. Romeo. (2009) Molecular geometry of CsrA (RsmA) binding to RNA and its implications for regulated expression. *J Mol Biol.* 392:511-28.

Bhatt, S., **Edwards, A. N.**, Nguyen, H. T., Merlin, D., Romeo, T. and D. Kalman. (2009) The RNA binding protein CsrA is a pleiotropic regulator of the locus of enterocyte effacement pathogenicity island of enteropathogenic *Escherichia coli*. *Infect Immun.* 77:3552-68.

Jonas, K., **Edwards, A. N.**, Simm, R., Romeo, T., Römling U. and O Melefors. (2008) The RNA binding protein CsrA controls cyclic di-GMP metabolism by directly regulating the expression of GGDEF proteins. *Mol Microbiol.* 70:236-57.

**REVIEWS and BOOK CHAPTERS**

**Edwards, A. N.** and S. M. McBride. (2014) "Initiation of Sporulation in *Clostridium difficile*: a New Twist on the Classic Model." *FEMS Microbiol Lett.* 358:110-118.

**ORAL PRESENTATIONS**

“Conserved Oligopeptide Permeases Modulate Sporulation Initiation in *Clostridium difficile*.” Anaerobe 2014, July 2014. Chicago, IL.

“Regulation of Sporulation Initiation in *Clostridium difficile* through Oligopeptide Permeases.” The 57<sup>th</sup> Annual Wind River Conference on Prokaryotic Biology, June 2013. Estes Park, CO.

“Regulation of Sporulation Initiation in *Clostridium difficile*.” Biomolecular Round Table, Emory University Department of Chemistry, February 2013. Atlanta, GA.

“Circuitry Linking the Csr and Stringent Response Global Regulatory Systems.” University of Florida Microbiology and Cell Science Departmental Seminar, September 2010. Gainesville, FL.

“DksA activates the CsrA system in *Escherichia coli*.” The 54<sup>th</sup> Annual Wind River Conference on Prokaryotic Biology, June 2010. Estes Park, CO.

“CsrA-mediated regulation of *relA* and *dksA* suggests CsrA modulates stringent response in *Escherichia coli*.” 7<sup>th</sup> Annual GDBBS Graduate Student Research Symposium, October 2009. Atlanta, GA.

“CsrA-mediated regulation of *relA* and *dksA* suggests CsrA modulates stringent response in *Escherichia coli*.” Molecular Genetics of Bacteria and Phages Meeting, August 2009. Madison, WI.

**POSTER PRESENTATIONS**

**Edwards, A. N.** and S. M. McBride. “A conserved Rap ortholog in *Clostridium difficile* regulates toxin expression but does not influence sporulation.” Southeastern Microbiology Summit (Florida and Southeastern Branch Meetings), September 2014. Ponte Vedra Beach, FL.

**Edwards, A. N.**, Mercante, J. W., Babitzke, P., and T. Romeo. “Determination of the global regulatory role of CsrA in *Escherichia coli*.” 6<sup>th</sup> Annual GDBBS Graduate Student Research Symposium, October 2008. Atlanta, GA.

**Edwards, A. N.**, Mercante, J. W., Babitzke, P., and T. Romeo. “Determination of the global regulatory role of CsrA in *Escherichia coli*.” American Society of Microbiology 108<sup>th</sup> General Meeting, June 2008. Boston, MA.

**Edwards, A. N.**, Mercante, J. W., Babitzke, P., and T. Romeo. “Determination of the global regulatory role of CsrA in *Escherichia coli*.” 5<sup>th</sup> Annual GDBBS Graduate Student Research Symposium, September 2007. Atlanta, GA.

**TEACHING EXPERIENCE**

July 2014	Research mentor to high school student (Eric Jedel) in the McBride Lab
May 2014 – Present	Research mentor to two undergraduate students (Kevin Childress and Ricardo Pascual) in the McBride Lab

Jan. – Feb. 2014	Research mentor to M.D./Ph.D. student (Emily Woods) in the McBride Lab
July 2013	Guest instructor for Emory University Summer Bridge Program (Getting a Leg Up @ Emory - GLUE)
Nov. 2012	Guest lecturer for BIO200 (Introduction to Research seminar course at Emory University); “How does <i>Clostridium difficile</i> initiate sporulation? Formulating a Research Hypothesis”
March – July 2012	Emory University Summer Bridge Program (Getting a Leg Up @ Emory - GLUE) - Developed curriculum and served as a co-instructor for an intensive three week residential and online program for pre-freshman Emory University students
Sept. 2011 – May 2012	Research mentor to undergraduate students (Leonid Yermakov and Patrick Lanter) and one graduate student (Shawwna Joynt) in the Gallivan Lab
March 2011	Mentored and created a three-day research project for an undergraduate student enrolled in WS585 (Feminist Studies and Synthetic Biology) at Emory University
Fall 2007	Medical Microbiology, Emory University School of Medicine -Teaching assistant for second year medical students
Fall 2006	Medical Microbiology, Emory University School of Medicine -Teaching assistant and laboratory instructor for second year medical students

### **COMMUNITY OUTREACH**

“Scientific Academic Research: What your tax dollars go toward and why it is important.” Rotary Club of Lawrenceville, December 2013. Lawrenceville, GA.

### **AWARDS AND HONORS**

2014	Eugene Gangarosa Laboratory Research Mentoring Fellowship
2014	Cover image for Microbe Magazine, April 2014, Vol. 9, No. 4
2013	Wind River Conference on Prokaryotic Biology Postdoctoral Travel Grant
2012	STEP/HHMI Curriculum Development Fellowship, Emory University
2005 – 2010	George W. Woodruff Fellowship, Emory University

- 2006 Igor Stojiljkovic Memorial Travel Award (did not accept)
- 2004 Cynthia Kenyon Outstanding Undergraduate Award, Department of Genetics, University of Georgia

**PROFESSIONAL SOCIETIES AND ACTIVITIES**

- 2011 - Present National Postdoctoral Association
- 2009 Member for the Microbiology and Molecular Genetics Student Symposium  
Committee: "Microbial Biology and Pathogenesis" Symposium
- 2007 Member for the Microbiology and Molecular Genetics Student Symposium  
Committee: "Frontiers in Microbial Genetics and Pathogenesis" Symposium
- 2007 – 2010 Student representative on the Microbiology and Molecular Genetics Executive  
Committee
- 2006 – Present American Society of Microbiology