

Curriculum Vitae (April 2020)
Zachary David Blount

Research Assistant Professor
Michigan State University
East Lansing, MI 48823

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Positions

2019 – Present **Research Assistant Professor**
Department of Microbiology and Molecular Genetics, Michigan State University,
East Lansing, MI

2018 – 2019 **Senior Research Associate**
Department of Microbiology and Molecular Genetics, Michigan State University,
East Lansing, MI

2018 – 2019 **Visiting Assistant Professor of Biology**
Department of Biology, Kenyon College, Gambier, OH

2011 – 2018 **Research Associate**
Department of Microbiology and Molecular Genetics, Michigan State University,
East Lansing, MI

Education

2003 – 2011 **Ph.D. in Microbiology and Molecular Genetics**
Department of Microbiology and Molecular Genetics, Michigan State University,
East Lansing, MI
Mentor: Dr. Richard E. Lenski
Committee: Dr. Terence Marsh, Dr. Robert Pennock, Dr. Thomas Schmidt
Dissertation: The Evolution of a Key Innovation in an Experimental Population of
Escherichia coli: A Tale of Opportunity, Contingency, and Co-option. Defended
March 16, 2011.
Defense Video: <https://youtu.be/rnXZ9lxQ8I>

2000 – 2003 **M.S. in Biological Sciences**
Department of Biological Sciences, University of Cincinnati, Cincinnati, OH
Mentor: Dr. Dennis W. Grogan
Thesis: Isolation and Characterization of Insertion Sequence Elements from
Natural Isolates of the Hyperthermophilic Archaeon *Sulfolobus*

1995 – 1999 **B.S. in Applied Biology, with High Honor**
School of Biology, Georgia Institute of Technology, Atlanta, GA
Minors: Health Science, History, Personality/Social Psychology,
Industrial/Organizational Psychology
Adviser: Dr. Yury Chernoff

Research Interests

Microbial Evolution, Experimental Evolution, Historical Contingency, Evolutionary Historicity, Speciation, Evolutionary Novelty, Evolutionary Potential, Niche Discovery

Publications

16. Jagdish T, Morris JJ, Wade BD, **Blount ZD**. Probing the Deep Genetic Basis of a Novel Trait in *Escherichia coli*. In Banshaf W, Cheng B, Deb K, Holekamp K, Lenski R, Ofria C, Pennock R, Punch B, Whittaker D (eds). *Evolution in Action: Past, Present, and Future*. New York, NY: Springer Nature. Forthcoming.
15. **Blount ZD**, Maddamsetti R, Grant NA, Ahmed ST, Jagdish T, Sommerfeld BA, Tillman A, Baxter JA, Moore J, Slonczewski JL, Barrick JE, Lenski RE. (2020) Genotypic and Phenotypic Evolution of *Escherichia coli* in a Novel Citrate-Only Resource Environment. *eLife* 2020;9:e55414.
14. **Blount ZD**, Lenski RE, Losos JB. (2018) Contingency and Determinism in Evolution: ‘Replaying the Tape of Life’. *Science*, **362**: eaam5979.
 - Invited Review
 - Citations: 91 as of July 3, 2020
13. Bajić D, Vila JCC, **Blount ZD**, Sánchez A. (2018) On the deformability of an empirical fitness landscape by microbial evolution. *Proceedings of the National Academy of Science (USA)*, **115**: 11286 – 11291.
 - Citations: 12 as of July 3, 2020
12. **Blount ZD** (2017). Replaying Evolution. *American Scientist*, **105**: 157 – 165.
 - Cover article: http://www.americanscientist.org/issues/popup_onthecover.aspx?id=126
 - Citations: 2 as of July 3, 2020
11. **Blount ZD** (2016). History’s Windings in a Flask: Microbial Experiments into Evolutionary Contingency. Pp. 244 – 263 in Ramsey G and Pence C (ed.) *Chance and Evolution*, Chicago, IL: University of Chicago Press.
 - Citations: 7 as of July 3, 2020
10. **Blount ZD** (2016). Bacterial Evolution. Pp.97 – 101 in Marsh TL and Viswanathan P *Introductory Laboratory for General and Allied Health Microbiology, MMG 302*. East Lansing, MI: Michigan State University Department of Microbiology and Molecular Genetics, Internal publication.
9. **Blount ZD** (2016). A Case Study in Evolutionary Contingency. *Studies in History and Philosophy of Biological and Biomedical Sciences*, **58**: 82 – 92.
 - Citations: 15 as of as of July 3, 2020
8. Lenski RE, Wisser MJ, Ribeck N, **Blount ZD**, Nahum JR, Morris JJ, Zaman L, Turner CB, Wade BD, Maddamsetti R, Burmeister AR, Baird EJ, Bundy J, Grant N, Card KJ, Rowles M, Weatherspoon K, Papoulis SE, Sullivan R, Clark C, Mulka JS, Hajela N (2015). Sustained Fitness Gains and Variability in Fitness Trajectories in the Long-Term Evolution Experiment with *Escherichia coli*. *Proceedings of the Royal Society B*, **282**: 20152292.
 - Citations: 81 as of July 3, 2020
7. Turner CB, **Blount ZD**, Lenski RE (2015). Replaying Evolution to Test the Cause of Extinction of One Ecotype in an Experimentally Evolved Population. *PLOS One*, **10**: e0142050.
 - Citations: 19 as of July 3, 2020

6. Quandt EM, Gollihar J, **Blount ZD**, Ellington AD, Georgiou G, Barrick JE (2015). Fine-Tuning Citrate Synthase Flux Potentiates and Refines Evolution of a Metabolic Innovation in *Escherichia coli*. *eLife* 2015;10.7554/eLife.09696
 - Citations: 47 as of July 3, 2020
5. **Blount ZD** (2015). The Unexhausted Potential of *E. coli*. *eLife*, 2015;4:e05826.
 - Invited review
 - Citations: 213 as of July 3, 2020
4. **Blount ZD**, Barrick JE, Davidson CJ, Lenski RE (2012). Genomic Analysis of a Key Innovation in an Experimental *E. coli* Population. *Nature*, **489**: 513 – 518.
 - Citations: 456 as of July 3, 2020
 - Faculty of 1000 recommendation
 - Listed by *Science News* as one of the top 25 science stories of 2012
3. **Blount ZD**, Borland CZ, Lenski RE (2008). Historical Contingency in the Evolution of a Key Innovation in an Experimental Population of *Escherichia coli*. *Proceedings of the National Academy of Sciences (USA)*, **105**: 7899 - 7906.
 - Citations: 761 as of July 3, 2020
 - Faculty of 1000 recommendation
2. **Blount ZD**, Grogan DW (2005). New Insertion Sequences of *Sulfolobus*: Functional Properties and Implications for Genome Evolution in Hyperthermophilic Archaea. *Molecular Microbiology*, **55**: 312 – 325.
 - Citations: 44 as of July 3, 2020
1. **Blount ZD**, Grogan DW (2002). *Laboratory Exercises for Microbiology: Biology 552*. Cincinnati, OH: University of Cincinnati Department of Biological Sciences, Internal Publication.

Publications in Preparation

- **Blount ZD**, Weatherspoon KM, Rowles MO, Lenski RE. Ecological divergence and incipient speciation in an experimental population of *E. coli*.
- Turner CB, **Blount ZD**, Mitchell DH, Lenski RE. Evolution and Coexistence in Response to a Key Innovation in a Long-term Evolution Experiment with *Escherichia coli*.
- Leeds MP, Koolage WJ, Berling EW, **Blount ZD**. Science Needs Philosophy.

Research Funding

2. Barrick JE, Marx, C.J., **Blount ZD**. “Mechanistic Basis of Mutations Potentiating the Evolution of Citrate Utilization in the LTEE”. BEACON Center for the Study of Evolution in Action: 2013 – 2015, \$134,571
1. Lenski RE, **Blount ZD**. “Mystery of Mysteries: A Study of Incipient Speciation in the Lab”. John Templeton Foundation, Foundational Questions in Evolutionary Biology: 2012 – 2014, \$198,000

Teaching Experience

- 2019** Guest Lecture: “Study Evolution with *E. coli*: 73,000* Generations of Evolution in Action (*and counting), Dewitt High School Honors Biology Visit to BEACON (Michigan State University)
Instructor of Record: **Biol 239: Introduction to Experimental Microbiology** (Kenyon College)

- I developed this course to introduce students to basic techniques in microscopy, bacteriological culturing, identification of microbes, and environmental microbiology. Proper data collection and scientific writing were also covered.

Instructor of Record: Biol 238: Microbiology (Kenyon College)

- A lecture-based introductory course that I developed to cover all aspects of basic microbiology, including scope, history, historical importance of microbes, methods, origins, cell physiology, genetics, metabolism, origin, evolution, speciation, experimental microbial evolution, the microbiome, virology, immunology, and infectious disease. I explicitly used evolution as a unifying concept to both tie the field together and link it to other parts of biology.

Instructor of Record: Bio 110: Introduction of Experimental Biology, Part II (Kenyon College)

- The second course in the freshman biology lab series. It focused on further development of scientific and writing skills, in part through the performance of independent research projects on which the students later presented.

2018 Instructor of Record: Biol 191: Not Just Darwin, a History of Evolutionary Thought (Kenyon College).

- Lecture-based course I developed to introduce students to the history of evolutionary theory from the Greeks through the modern day. The course content included examination of the history and nature of science, the place of biology within science, the role of Darwin in the birth of evolutionary theory, its development since Darwin, its misuse to support social or political agendas like scientific racism, sexism, and classism, as well as the history, tactics, and diversity of the creationist movement.

Instructor of Record: Biol 109: Introduction to Experimental Biology (Kenyon College)

- The first in a year-long freshman biology lab series, this course focused on development of skills in data analysis, experimental design, and scientific writing.

2017 Guest Lecture: "A Big Ball of Evolvey-Wolvey Stuff: The Interplay of Ecology, Physiology, Evolution, Innovation, and Incipient Speciation in an Experimental Population of *E. coli*", Biology 650, Microbial Biology (University of Wisconsin at Oshkosh)

Guest Lecture: "Study Evolution with *E. coli*: 68,000* Generations of Evolution in Action (*and counting), Dewitt High School Honors Biology Visit to BEACON (Michigan State University)

2016 Guest Lecture: "A Big Ball of Evolvey-Wolvey Stuff: The Interplay of Ecology, Physiology, Evolution, Innovation, and Incipient Speciation in an Experimental Population of *E. coli*", Biology 650, Microbial Biology (University of Wisconsin at Oshkosh)

Guest Lecture: "The *E. coli* Long-Term Evolution Experiment: 65,500* Generations of Evolution in Action (*and counting)", ISB (Michigan State University)

2015 Guest Lecture: "Examining the Evolution of a Novel Trait in a Long-Term Experiment with *E. coli*", LB492, DNA Sequencing Technology and Applications (Michigan State University)

Lecture: "Studying Evolution with *E. coli*: 62,500 Generations of Evolution in Action", Dewitt High School Honors Biology Visit to BEACON (Michigan State University)

2014 Lecture: "Studying Evolution with *E. coli*: 61,500 Generations of Evolution in Action", Dewitt High School Honors Biology Visit to BEACON (Michigan State University)

- Lecture: “Studying Evolution with *E. coli*”, BEACON Center and NESCent Darwin Day Road Show (Hesperia High School and Mason County Easter Middle and High School). Given eight times over two days to a total of ~400 middle and high school students.
- 2013** Lecture: “Making the New from the Old: The Evolution of a Novel Trait in an Experimental Population of *E. coli*”, BEACON and BioQUEST Summer Workshop for High School Teachers, Kellogg Biological Station, Hickory Corners, MI.
- 2012** Lecture: “Making the New from the Old: The Evolution of a Novel Trait in an Experimental Population of *E. coli*”, Think Evolution Summer Institute for Science Educators, Berkley, California.
- 2011** Guest Lecture: “The *E. coli* Long-Term Evolution Experiment: 50,000 Generations of Evolution in Action”, Evolution in Action (Michigan State University)
- 2004** Teaching Assistant: **MMG 408: Advanced Microbiology Lab** (Michigan State University)
- 2003** Teaching Assistant: **Biol 271: Elementary Microbiology Lab** (University of Cincinnati)
- 2002** Teaching Assistant: **Biol 552: Microbiology Lab** (University of Cincinnati)
- Developed and wrote new lab manual, developed and instituted new curriculum
- Teaching Assistant: **Biol 271: Elementary Microbiology Lab** (University of Cincinnati)
- 2001** Teaching Assistant: **Biol 552: Microbiology Lab** (University of Cincinnati)
- Teaching Assistant: **Biol 113: Freshman Biology Lab III** (University of Cincinnati)
- Teaching Assistant: **Elementary Microbiology Lab** (University of Cincinnati)
- 2000** Teaching Assistant: **Biol 552: Microbiology Lab** (University of Cincinnati)

Mentoring

Michigan State University

At MSU, I mentored seven undergraduate students, two graduate rotation students, and two high school science teachers. This group included five women, six members of underrepresented minorities, and one disabled individual. My undergraduate mentees have made significant achievements. Three have presented their research at conferences, including two who presented posters at the 2015 American Society for Microbiology General Meeting in New Orleans. Five have been or will be co-authors on major research papers. One former undergraduate mentee is currently employed as a research specialist at the University of Illinois. One graduated from the Cancer Chemical Biology MS program at the University of Michigan. Another earned an MS of Biomedical Engineering at the George Washington University, and is currently a Project Engineer at Project Farma. Yet another is in the Systems Biology Graduate Program at Harvard University, where he is working with Michael Desai. Finally, one is currently an Animal Care Keeper at the Living Desert Zoo in Palm Desert, California. The two graduate rotation students I mentored joined the Lenski Lab and have accrued distinguished records as researchers and scholars. The two high school science teachers I mentored are planning to develop published curricula based on the research they did with me.

- **Undergraduate Students**
 - **Marwa Adawe**: January – May 2007
 - **Kiyana Weatherspoon**: January 2013 – October 2015
 - **Maia Rowles**: January 2013 – November 2015
 - **Jacob Wright**: September 2014 – April 2016
 - **Brooke Sommerfeld**: September 2015 – July 2018

- **Tanush Jagdish:** November 2015 – August 2018 (Kalamazoo College, mentored at Michigan State University)
- **Jessica Baxter:** May 2018 – Present
- **Graduate Students**
 - **Nkrumah Grant:** Fall 2014 (Rotation Student)
 - **Kyle Card:** Winter 2015 (Rotation Student)
- **High School Science Teachers**
 - **Fred Hingst:** Summer 2015, Summer 2016
 - **Richard Schultz:** Summer 2015, Summer 2016

Kenyon College

At Kenyon College, I mentored eight freshman students in independent research projects. This group included five women, one of whom belonged to an underrepresented minority. Two of these students (S.A. and A.T.) made contributions that will result in co-authorship of a publication.

- **Undergraduate Students**
 - **Sumaya Ahmed:** January – July 2019
 - **Alice Tillman:** February – May 2019
 - **Joanna Van Dyk:** February – May 2019
 - **April Murphy:** February – May 2019
 - **Emma O’Shaughnessy:** February – May 2019
 - **Mark Lang:** February – May 2019
 - **Samuel Casad:** February – May 2019
 - **Michael Madritch:** February – May 2019

Invited Talks

- “A Big Ball of Evolvey-Wolvey Stuff: The Interplay of Ecology, Physiology, Evolution, Innovation, and Incipient Speciation in an Experimental Population of *E. coli*” (2017). Kenyon College Department of Biological Sciences Seminar Series, Gambier, OH.
- "The *E. coli* Long-Term Evolution Experiment 66,000 Generations (And Counting) of Evolution in Action" (2016). UW Oshkosh Biology and Microbiology Journal Club Seminar Series, Oshkosh, WI.
- “Richard E. Lenski: The Man, the Career, the Legend, and His Place in Science” (2016). Keynote Address, BEACON Congress Symposium in Honor of Richard Lenski’s 60th Birthday, East Lansing, MI.
 - Video: <https://youtu.be/VX9n8sIMXXs>
- “Ecological Specialization and Incipient Speciation in an Experimental Population of *Escherichia coli* (The Cit⁺ Story is Even More Complicated than We Thought)” (2016). EvoAct: Evolution in Action with Living and Artificial Organisms, Autrans, France.
- “Examining the Evolution of a Novel Trait in a Long-Term Experiment with *E. coli*” (2014). Invited Speaker, National Association of Biology Teachers Professional Development Conference, Cleveland, OH.
 - Video: <https://youtu.be/qpnwLdh6ftg>
- “Historical Contingency and the *E. coli* Long-Term Evolution Experiment” (2012). ALife 13, East Lansing, MI.

- “The Evolution of Aerobic Citrate Utilization in an Experimental Population of *E. coli*: A Case Study in Evolutionary Contingency.” (2013) Templeton Foundation Workshop on Order and Contingency in Science and the Humanities. Oxford, UK.
- “Watching Evolution Innovate in the Lab” (2011). Santa Fe Institute Workshop on Innovation, San Jose, CA.
- “History 200: Darwin, *E. coli*, and Evolution” (2009). Science University for Alumni of the MSU College of Natural Sciences, East Lansing, MI.

Contributed Presentations

Posters

- **Blount ZD**, Maddamsetti R, Grant N, Jagdish T, Quandt EM, Sommerfeld BA, Baxter JA, Ahmed S, Tillman A, Barich D, Moore J, Slonczewski JL, Barrick JE, Lenski RE (2019). Genome Instability and Cell Death During Adaptation of *E. coli* to a Citrate-only Resource Environment. Gordon Research Conference in Microbial Population Biology, Andover, NH.
- **Blount ZD**, Weatherspoon KM, Rowles MO, Sommerfeld BA, Turner CB, Lenski RE (2017). Learning to Walk and Chew Gum at the Same Time: The Complexities of Incipient Speciation by a Citrate-Using Lineage of *E. coli*. 2017 BEACON Congress, East Lansing, MI.
- **Blount ZD**, Weatherspoon KM, Rowles MO, Sommerfeld BA, Turner CB, Lenski RE (2017). Learning to Walk and Chew Gum at the Same Time: The Complexities of Incipient Speciation by a Citrate-Using Lineage of *E. coli*. Gordon Research Seminar and Conference in Microbial Population Biology, Andover, NH.
- **Blount ZD**, Weatherspoon KM, Rowles MO, Sommerfeld BA, Wright JT, Turner CB, Lenski RE (2017). Adaptation to Discovered and Self-Constructed Niches during Incipient Speciation in an Experimental Population of *E. coli*. Evolution 2017, Portland, OR.
- **Blount ZD**, Weatherspoon KM, Rowles MO, Sommerfeld BA, Wright JT, Turner CB, Lenski RE (2016). Adaptation to Discovered and Self-Constructed Niches during Incipient Speciation in an Experimental Population of *E. coli*. Second ASM Conference on Experimental Microbial Evolution, Washington, DC.
- **Blount ZD**, Weatherspoon KM, Rowles MO, Wright JT, Lenski RE (2015). Two Tales of a Key Innovation. Gordon Research Seminar and Conference in Microbial Population Biology, Andover, NH.
- **Blount ZD**, Weatherspoon KM, Rowles MO, Wright JT, Lenski RE (2015). Two Tales of a Key Innovation. 2015 BEACON Congress, East Lansing, MI.
- **Blount ZD**, Weatherspoon, KM, Rowles MO, Quandt EM, Lenski RE (2015). Incipient Speciation in an Experimental Population of *E. coli*. Gordon Research Conference on Speciation, Ventura, CA.
- Turner CB, **Blount ZD**, Mitchell DH, Lenski RE (2015). Evolution of Stable Coexistence in Response to a Key Innovation in a Long-Term Evolution Experiment with *E. coli*. American Society for Microbiology, 115th General Meeting, New Orleans, LA.
- Weatherspoon KM, **Blount ZD**, Wright JT, Lenski RE (2015). Evidence of Self-Cross Feeding in Niche Specialization in an Experimental Population of *E. coli*. American Society for Microbiology, 115th General Meeting, New Orleans, LA.

- Rowles MO, **Blount ZD**, Wright JT, Lenski RE (2015). Phenotype and Fitness Value of a Novel Trait-Confering Mutation Vary with Genetic Background in *E. coli*. American Society for Microbiology, 115th General Meeting, New Orleans, LA.
- **Blount ZD**, Weatherspoon KM, Rowles MO, Quandt EM, Lenski RE (2014). Genetic Basis of Ecological Specialization and Incipient Speciation in an Experimental Population of *E. coli*. American Society for Microbiology 114th General Meeting, Boston, MA.
- **Blount ZD**, Weatherspoon KM, Rowles MO, Quandt EM, Lenski RE (2014). Genetic Basis of Ecological Specialization and Incipient Speciation in an Experimental Population of *E. coli*. BEACON Congress, East Lansing, MI.
- **Blount ZD**, Lenski RE (2013). Incipient Speciation in an Experimental Population of *E. coli*. Gordon Research Conference on Microbial Population Biology, Andover, NH.
- **Blount ZD**, Lenski RE (2011). Proposed Tests of Speciation in an Experimental Population of *E. coli* Following the Evolution of a Key Innovation. Gordon Research Conference on Microbial Population Biology, Andover, NH.
- **Blount ZD**, Barrick JE, Sleight SC, Lenski RE (2009). Gene Amplification, Molecular Exaptation, and the Evolution of a Key Innovation in an Experimental Population of *Escherichia coli*. MSU Council of Graduate Students Graduate Academic Conference, East Lansing, MI.
- **Blount ZD**, Barrick JE, Sleight SC, Lenski RE (2009). Gene Amplification, Molecular Exaptation, and the Evolution of a Key Innovation in an Experimental Population of *Escherichia coli*. Midwest Ecology and Evolution Conference, Lincoln, NE.
- **Blount ZD**, Barrick JE, Lenski RE (2009). Long-term Co-existence of Distinct Ecotypes in an Experimental Population of *E. coli* Following after Evolution of a Key Innovation: A Case of Incipient Speciation? American Society for Microbiology, 109th General Meeting, Philadelphia, PA.
- **Blount ZD**, Barrick JE, Lenski RE (2009). Phylogenetic History of a Long-Term Experimental Population of *E. coli*: Indications of Incipient Speciation. Gordon Research Conference on Microbial Population Biology, Andover, NH.
- **Blount ZD**, Barrick JE, Sleight SC, Lenski RE (2008). Amplification of a Genetic Segment Containing a Citrate Transporter Gene Underlies Evolution of Aerobic Citrate Utilization in a Long-Term Population of *Escherichia coli*. American Society for Microbiology, 108th General Meeting, Boston, MA.
- **Blount ZD**, Borland CZ, Lenski RE (2007). Historical Contingency in the Evolution of a Novel Metabolic Capacity in a Population of *Escherichia coli*. Gordon Research Conference on Microbial Population Biology, Andover, NH.
- **Blount ZD**, Borland CZ, Lenski RE (2005). Maintenance of Ecological Diversity after Spontaneous Evolution of Citrate Utilization in a Population of *E. coli*. American Society for Microbiology, 105th General Meeting, Atlanta, GA.
- **Blount ZD**, Grogan DW (2003). Active Insertion Sequences in Geographically Separated Populations of *Sulfolobus*. American Society for Microbiology, 103rd General Meeting, Washington, D.C.

Talks

- “Adaptation to Discovered and Self-Constructed Niches during Incipient Speciation in an Experimental Population of *E. coli*” (2016). Evolution 2016, Austin, TX.
- “Adaptation to Discovered and Self-Constructed Niches during Incipient Speciation in an Experimental Population of *E. coli*” (2016). BEACON Congress, East Lansing, MI.

- “Incipient Speciation in an Experimental Population of *E. coli*” (2015). Gordon Research Conference on Speciation, Ventura, CA.
- “Ecological Specialization and Incipient Speciation in an Experimental Population of *E. coli*” (2014). Society for Molecular Biology and Evolution 2014 Conference, San Juan, Puerto Rico.
- “Ecological Specialization and Incipient Speciation in an Experimental Population of *E. coli*” (2014). American Society for Microbiology First Meeting on Microbial Experimental Evolution, Washington, D.C.
- “Ecological Specialization and Incipient Speciation in an Experimental Population of *E. coli*” (2014). Evolution 2014, Raleigh, NC.
- “Ecological Specialization and Incipient Speciation in an Experimental Population of *E. coli*” (2014). EMBO Conference on Experimental Approaches to Evolution and Ecology using Yeast and Other Model Systems, Heidelberg, Germany.
- “Adaptation of Experimental *E. coli* Populations to a Citrate-only Medium” (2013). Young Investigator Speaker, American Society for Microbiology General Meeting, Denver, CO.
- “Adaptation of Experimental *E. coli* Populations to a Citrate-only Medium” (2013). Evolution 2013 Conference, Snowbird, UT.
- “Incipient Speciation in an Experimental Population of *E. coli*.” (2013) Gordon Research Symposium, Andover, NH.
- “Evidence of Niche-Specific Adaptive Mutation Accumulation in a Novel Ecotype in an Experimental Population of *E. coli* Following the Evolution of a Key Adaptation” (2012). Young Investigator Speaker, American Society for Microbiology General Meeting, San Francisco, CA.
- “Evidence of Speciation in an Experimental Population of *E. coli* Following the Evolution of a Key Adaptation” (2012). Evolution 2012 Conference, Ottawa, Ontario, Canada.
- “Evidence of Speciation in an Experimental Population of *E. coli* Following the Evolution of a Key Adaptation” (2012). BEACON Congress, East Lansing, MI.
- “Evidence of Speciation in an Experimental Population of *E. coli* Following the Evolution of a Key Adaptation” (2012). ALife 13, East Lansing, MI.
- “Evolution of a Key Innovation in an Experimental Population of *E. coli*: A Tale of Contingency and Cooption” (2008). Evolution 2008, St. Paul, MN.
- “Historical Contingency in the Evolution of a Key Adaptive Innovation in *Escherichia coli*” (2007). Ecology, Evolutionary Biology, and Behavior Program Student Speaker, Michigan State University, East Lansing, MI.

Fellowships, Awards, Scholarships, and Honors

- **April 2018: Ralph Evans Award for Excellence in Microbial Evolution** – Michigan State University
- **October 2014: Advanced Training Centre Corporate Partnership Programme Fellowship** – European Molecular Biology Laboratory
- **December 2012:** Work described by Blount et al 2012 chosen by *Science News* magazine as one of the top 25 science stories of 2012.
- **Spring 2011: Ronald M. and Sharon Rogowski Fellowship** – Michigan State University
- **Spring 2009: DuVall Award** – Michigan State University

- **Fall 2008 – Summer 2009: Barnett Rosenberg Fellowship** – Michigan State University
- **Spring 2008: Rudolf Hugh Fellowship** – Michigan State University
- **2007: Ecology, Evolutionary Biology, and Behavior Graduate Student Speaker Award** – Michigan State University
- **Summer 2006, 2007: Ecology, Evolutionary Biology, and Behavior Summer Fellowship** – Michigan State University
- **Summer 2002: Wieman Memorial Fellowship** – University of Cincinnati.
- **2001 – 2003: University Scholarship** – University of Cincinnati
- **1995 – 1999: Georgia HOPE Scholarship** – Georgia Institute of Technology

Professional Memberships

- American Association for the Advancement of Science
- American Society for Microbiology
- Society for the Study of Evolution
- National Center for Science Education
- American Society of Naturalists
- Society for Molecular Biology and Evolution
- National Association of Biology Teachers
- Society for Applied Microbiology

Service

- **Journal Reviewer:** *Applied and Environmental Microbiology, Biology Letters, Biological Reviews, BMC Evolutionary Biology, Current Biology, Current Opinion in Microbiology, Ecology Letters, eLife, Environmental Microbiology and Environmental Microbiology Reports, Evolution, Genome Biology and Evolution, Heliyon, Heredity, IEEE Access, Interface Focus, The ISME Journal, mBio, Microbiology Open, Molecular Phylogenetics and Evolution, Nature, Nature Communications, PeerJ, PLoS ONE, Proceedings of the Royal Society B, Science, Scientific Reports, Trends in Ecology and Evolution.*
- **Ad Hoc Grant Proposal Reviewer:** European Research Council, National Science Foundation (USA), The Marsden Fund, NASA, University of Central Oklahoma
- **Ad Hoc Publication Reviewer:** The John Templeton Foundation, Oxford University Press
- **Organizational Positions Held:**
 - Treasurer, Biology Graduate Students Association, University of Cincinnati: 2001 – 2002
 - President, Biology Graduate Students Association, University of Cincinnati: 2002 – 2003
- **Departmental Committees:**
 - Michigan State University College of Natural Sciences Dean's Student Advisory Committee, Microbiology and Molecular Genetics Graduate Representative: 2005 - 2007
 - Michigan State University, Department of Microbiology and Molecular Genetics Graduate Committee, Graduate Representative: 2007 – 2008
 - Michigan State University, Department of Microbiology and Molecular Genetics Curriculum Committee, Graduate Representative: 2008 – 2009

Public Outreach

- **2009 – present** – Volunteer for MSU Museum’s “Darwin Discovery Day” Educational Event
 - **General Volunteer Coordinator:** 2015 – 2018
 - **Planning Committee:** 2015 – present
- **2016** – Volunteer for BEACON Center Science Fair displays and demonstrations at local schools
- **2014, 2015** – MSU Science Festival Presentation with professors Sarah Gibbons, Kate Fedewa, and Brian Holcomb of MSU Dept. of Writing, Rhetoric, and American Culture: “Science, Fiction, and the Real Monsters of Our Imagination.”
- **2014** – Participant for the 2014 BEACON Center and NESCent Darwin Day Road Show, in which I gave a talk on my path to becoming a scientist, research, and the use of *E. coli* to study evolution to eight high school classes in two schools over the course of two days, speaking to a total of ~400 students.
- **2013** – Volunteer for September 26 Educators’ Night at the Museum, MSU Museum
- **2012** – November 11 Meet-up Speaker for the Michigan Skeptics Association
- **2012** – WAMC Academic Minute Podcast Speaker, November 19, 2012, *Evolving Bacteria*

Media Coverage

- “A New Step in Evolution”, *The Loom*, 6/02/2008.
- “History Restricts and Guides the Evolution of Innovations”, *Not Exactly Rocket Science*, 6/02/2008.
- “Tracking Adaptation as Bacteria Evolve”, *Ars Technica*, 6/04/2008.
- “*E. coli* Evolution Follow-up”, *The Loom*, 6/05/2008.
- “A New Step in Evolution, continued: Read the Paper”, *The Loom*, 6/05/2008.
- “Bacteria Make Major Evolutionary Shift in the Lab”, *The New Scientist*, 6/09/2008.
- “Historical Contingency in the Evolution of *E. coli*”, *Pharyngula*, 6/10/2008.
- “Hitting the Redo Button for Evolution”, *Science News for Kids*, 2/11/2009.
- “Evolution in Action”, *BBC Knowledge*, April 2009 Issue.
- Dawkins, R. *The Greatest Show on Earth*. (Free Press, New York, New York, 2009), discussed in Chapter 5.
- “Postdoctoral Researcher Zachary Blount Discusses Discovering the Processes of *E. coli* Evolution”, *NSF News Release Interview*, 2012.
- “Evolution is as Complicated as 1, 2, 3”, *MSU News*, 9/20/2012.
- “Evolutionary Innovation Caught in the Act”, *Washington Post*, 9/19/2012.
- “Bacteria Learn New Trick”, *Science News for Kids*, 10/12/2012.
- “Evolving Bacteria”, *WAMC Academic Minute*, 11/19/2012.
- “Top 25 Science Stories of 2012: Evolving *E. coli*”, *Science News*, 12/13/2012.
- “Lenski’s Long-Term Evolution Experiment: The Evolution of Bacteria that can use Citrate as a Carbon Source”, *The Sandwalk*, 12/03/2013.
- “Cradle of Creation: Evolution Shapes Up New Ecosystem in the Lab”, *The New Scientist*, 6/19/2015.
- “Top 25 Science Stories of 2015: Fluke Extinction Surprises Lab”, *Science News*, 12/15/2015.

- Losos, JB. *Improbable Destinies*. (Riverhead Books, New York, New York, 2017). Discussed in Chapter 10.

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