Molly K. Gibson

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Education

Ph.D. Computational & Systems Biology — 2010-Present
Washington University, St. Louis, Missouri
Advisor: Dr. Gautam Dantas
Expected Graduation: June 2015

B.S. Computer Science — 2005-2009
Truman State University, Kirksville, Missouri — *summa cum laude*

Honors and Awards

National Science Foundation Graduate Fellowship	2011-2014
Outstanding Talk, Genetics & Computational Biology Retreat	2014
1st Place Overall Poster, International Meeting on Microbial Genomics	2014
Outstanding Poster, Genetics & Computational Biology Retreat	2013
Clinton Global Initiative University (CGIU)	2013
Mr. & Mrs. Spencer T. Olin Fellowship	2010-2015
Undergraduate Research Fellowship	2008-2009
Phi Kappa Phi, Truman State University Chapter	2009
Omicron Delta Kappa, National Leadership Honor Society	2007
The Boeing Company - Math & Computer Science Scholar	2008
Dean's List (Truman State Univ.)	2005-2009
National Merit Coorporation Scholar	2005-2009
President's Honorary Scholar	2005-2009
President's Leadership Scholar	2005-2009

Professional Experience

Washington University School of Medicine, Saint Louis, MO
Graduate Researcher, Center for Genome Sciences and Systems Biology — 2010-Present
Mr. and Mrs. Spencer T. Olin Fellow, Washington University in Saint louis — 2010-Present
NSF Graduate Research Fellow — 2011-2014
Developed and applied computational tools and models for studying antibiotic resistance in soil and human associated microbial communities

The BALSA Group, Saint Louis, MO
Project Manager/Consultant — 2011-Present
Provided data-driven consulting solutions to startup and growth-stage biotechnology companies, including market analysis & budget review, intellectual property and licensing analysis, and technology assessment.

The Boeing Company, Saint Louis, MO
Software Engineer — 2009-2010
Developed, maintained, and tested code that integrates software components into a fully functional software system for high fidelity F15-E flight simulator

Maize Shoot Apical Meristem Project, Kirksville, MO
Undergraduate Researcher — 2007-2009
Designed, developed and populated a relational database to house the expression and functional

annotation data of a set of approximately 40,000 *Zea mays* genes.

The SERVE Center, Kirksville, MO
Senior Staff Coordinator 2006-2009
Led a staff of 15 employees, including scheduling, payroll, and performance evaluation, executing staff meetings and delegating tasks to ensure the highest level of productivity.

Computational Skills	**Languages**	bash, Python, Perl, R, Java, C++, Ada, XML
	Version Control	git, hg, svn, cvs
	Other	LaTeX, MatLab, SQL, nose

Teaching

Bioinformatics Workshop January 6-8, 2015
http://mollykgibson.com/bioinformatics
Washington University School of Medicine
Developed and led a novice-level bioinformatics workshop for scientists at Washington University

Software Carpentry 2013-Present
Mozilla Labs (https://www.softwarecarpentry.org)
Instructor/Contributor
- Washington University in Saint Louis (August 11-12, 2014)
- Lawrence Berkeley National Laboratory (April 14-15, 2014)
- Iowa State University (January 8-9, 2014)

Bio5495: Algorithms for Computational Biology Fall 2011
Washington University in Saint Louis
Teaching Assistant
Topics covered: probability theory, hidden Markov models (HMMs), network inference, transcription factor binding motifs, modeling gene regulation dynamics, metabolic modeling, short read alignment

Science Outreach **The Young Scientist Program** (http://ysp.wustl.edu) 2011-2015
Washington University in Saint Louis
Director (2014-2015)
Director of Information Technology (2012-2014)
College Prep Coordinator (2011-2012)

Professional Service

Professional Affiliation
American Society for Microbiology (ASM) 2013-Present
Association for Women in Science (AWIS) 2012-Present

Publications

1. **Gibson MK**, Forsberg KJ, Dantas G. Improved annotation of antibiotic resistance determinants reveals resistomes cluster by ecology. *The ISME Journal.* 2015; 9:207.

2. Lax S, Smith DP, Hampton-Marcell J, Owens SM, Handley KM, Scott NM, Gibbson SM, Larsen P, Shogan BD, Weiss S, Metcalf JL, Ursell LK, Vazquez-Baeza Y, Van Treuren W, Hasan NA, **Gibson MK**, Colwell R, Dantas G, Knight R, Gilbert JA. Longitudinal Analysis of Microbial Interaction Between Humans and the Indoor Environment. *Science.* 2014; 345(6200):1048

3. **Gibson MK***, Pesesky MW*, Dantas G. The Yin and Yang of Bacterial Resilience in the Human Gut Microbiota. *J. Mol. Biol.* 2014; DOI: 10.1016/j.jmb.2014.05.029

4. Forsberg KJ*, Patel S*, **Gibson MK**, Lauber CL, Knight R, Fierer N, Dantas G. Bacterial phylogeny structures soil resistomes across habitats. *Nature.* 2014; 509 (7502): 612.

5. Pehrsson EC, Forsberg KJ, **Gibson MK**, Ahmadi S and Dantas G. Novel resistance functions uncovered using functional metagenomic investigations of resistance reservoirs. *Front Microbiol.* 2013; 4:145. doi: 10.3389/fmicb.2013.00145

   * These authors contributed equally

References   Available upon request