

# *Erik S. Wright*

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## **EDUCATION**

**University of Wisconsin-Madison** **12/2016**

- Ph.D. in Microbiology
- Thesis: “Population and community ecology of bacteria from the genus *Streptomyces*”
- Advisor: Dr. Kalin Vetsigian

**University of Wisconsin-Madison** **08/2012**

- M.S. in Civil and Environmental Engineering
- Thesis: “Identification of Bacterial and Archaeal Communities from Source to Tap”
- Advisor: Dr. Daniel Noguera

**Cornell University** **01/2007**

- B.S. in Electrical and Computer Engineering

## **EMPLOYMENT**

**University of Pittsburgh** **2017 to present**  
**Assistant Professor**

**University of Wisconsin-Madison** **2010 to 2016**  
**Research Assistant**

**Apple Inc., Cupertino, CA** **2007 to 2008**  
**Reliability Engineer**

## **Publications**

### **Peer-reviewed publications**

- **Wright, E. S.** & Vetsigian, K. H. (2016). “Quality filtering of Illumina index reads mitigates sample cross-talk”, *BMC Genomics*.
- **Wright, E. S.** (2016). “Using DECIPHER v2.0 to Analyze Big Biological Sequence Data in R”, *The R Journal*.
- **Wright, E. S.** & Vetsigian, K. H. (2016). “Inhibitory interactions promote frequent bistability among competing bacteria”, *Nature Communications*.
- **Wright, E. S.**, & Vetsigian, K. H. (2016). “DesignSignatures: a tool for designing primers that yields amplicons with distinct signatures”, *Bioinformatics*.
- **Wright, E. S.** (2015). “DECIPHER: harnessing local sequence context to improve protein multiple sequence alignment”, *BMC Bioinformatics*.

- Noguera, D. R., **Wright, E. S.**, Camejo, P., and Yilmaz, L. S. (2014). "Mathematical Tools to Optimize the Design of Oligonucleotide Probes and Primers", *Applied Microbiology and Biotechnology*.
- **Wright, E. S.** (corresponding author), Yilmaz, L. S., Corcoran A. M., Ökten, H.E., & Noguera, D. R. (2014). "Automated Design of Probes for rRNA-targeted Fluorescence *In Situ* Hybridization Reveals the Advantages of Using Dual Probes for Accurate Identification", *Applied and Environmental Microbiology*.
- **Wright, E. S.**, Yilmaz, L. S., Ram, S., Gasser, J. M., Harrington, G. W., & Noguera, D. R. (2014). "Exploiting Extension Bias in PCR to Improve Primer Specificity in Ensembles of Nearly Identical DNA Templates", *Environmental Microbiology*.
- **Wright, E. S.**, Strait, J. M., Yilmaz, L. S., Harrington, G. W., & Noguera, D. R. (2013). "Identification of Bacterial and Archaeal Communities From Source to Tap", *Water Research Foundation*, 1–76.
- Yilmaz, L. S., Loy, A., **Wright, E. S.**, Wagner, M., & Noguera, D. R. (2013). "Modeling Formamide Denaturation of Probe-Target Hybrids for Improved Microarray Probe Design in Microbial Diagnostics", *PLoS ONE*.
- **Wright, E. S.**, Yilmaz, L. S., & Noguera, D. R. (2012). "DECIPHER: A Search-Based Approach to Chimera Identification for 16S rRNA Sequences", *Applied and Environmental Microbiology*.

### **TEACHING EXPERIENCE**

- **Instructor, Computer Science 368:** "Introduction to R Programming for Scientific Research." Designed a new curriculum to teach the R language to inexperienced programmers. Taught the course for two semesters (18 and 47 students) and supervised a teaching assistant.
- **Teaching Assistant, Microbiology 304:** "Biology of Microorganisms laboratory." Led a 38 student course for one semester in 2014.

### **MENTORING EXPERIENCE**

- **Undergraduate Research Assistantships (8 students):**
  - Adithya Murali (2016), Raveena Gupta (2015-2016), Hannah Haight (2014-2015), Amelia Remiarz (2014-2015), Ryan Przybylski (2014), Brian Bauer (2012-13), Jeremy Gasser (2011-12), Jacqueline Strait (2011-12)
- **High School Research Apprenticeships (3 students):**
  - Gabe Kruse (2012-2014), Rowan Meara (2012), Alexander Bastian (2011)

### **RESEARCH GRANTS & FUNDING AWARDS**

- 2016 Graduate School Student Research Travel Grant Award
- 2016 MDTP (Microbiology Doctoral Training Program) Travel Award

- 2014-2015 Advanced Computing Infrastructure Fellow
- 2014 Sigrid Leirmo Memorial Award
- 2013 Becker Travel Supplements Award
- 2012 Becker Travel Supplements Award
- 2011 BACTER (Bringing Advanced Computational Techniques to Energy Research) Award
- 2011 Becker Travel Supplements Award

## **PRESENTATIONS**

### **Oral presentations**

- **Wright, E. S.** (2016) "Survival of the Common is Nearly as Widespread as Survival of the Fittest among Antibiotic Producing Bacteria", *Workshop on Evolutionary Systems Biology & Modeling*, Madison, WI.
- **Wright, E. S.** (2016) "Analysis of big biological sequence datasets using the DECIPHER package", *useR! 2016*, Palo Alto, CA.
- **Wright, E. S.** (2016) "Managing big biological sequence data with Biostrings and DECIPHER", *BioC 2016*, Palo Alto, CA.
- **Wright, E. S.** (2016) "Invasion and Interaction Networks in Microbial Communities Composed of Antibiotic Producers", *ASM General Meeting*, Boston MA.
- **Wright, E. S.** (2015) "Survival of the common in communities of antibiotic producers", *Systems Biology Seminars*, Madison, WI.
- **Wright, E. S.** (2015) "Multiple Genome Alignment", *IPAM: Workshop on Multiple Sequence Alignment*, Los Angeles, CA.
- **Wright, E. S.** (2014) "Stability and diversification in synthetic ecosystems", *Systems Biology Seminars*, Madison, WI.
- **Wright, E. S.** (2013) "Design of a 16S rRNA High-Density Microarray and Application to Studying the Microbiome of Drinking Water Distribution Systems", *Microbial Ecology in Water Engineering International Conference*, Ann Arbor, MI.
- **Wright, E. S.** (2011) "DNA Tools for Identifying Microbes in Drinking Water", *Wisconsin Water Association Annual Conference*, Wisconsin Dells, WI.

### **Poster presentations**

- **Wright, E. S., & Vetsigian, K. H.** (2016) "Survival of the common nearly as widespread as survival of the fittest among competing bacteria", *Population, Evolution, and Physics*, Aspen, CO.
- **Wright, E. S., Yilmaz, L. S., Gasser, J. M., and Noguera, D. R.** (2012) "Improving Specificity in qPCR with Primer Design Utilizing Taq's Terminal Mismatch Bias", *ASM General Meeting*, San Francisco, CA.

- **Wright, E. S.**, Yilmaz, L. S., and Noguera, D. R. (2011) "DECIPHER: A Search-Based Approach to Chimera Identification for 16S rRNA Sequences", *MathBio3*, Madison, WI.