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Education and Academic Positions

- **University of Wisconsin-Madison (UW-Madison)** — Madison, WI
  Postdoctoral Associate, Department of Bacteriology — *2014-present*
  - Advisor: Katherine D. McMahon
- **UW-Madison** — Madison, WI
  Ph.D., Chemical Engineering — *2009-2014*
  - Advisor: Jennifer L. Reed
- **Case Western Reserve University (CWRU)** — Cleveland, OH
  B.S., Chemical Engineering — *2005-2009*
  - *Summa cum laude*

Fellowships

U.S. Department of Agriculture (USDA-NIFA), Postdoctoral Fellowship . . . 2015-present
National Science Foundation, Graduate Research Fellowship 2010-2014
UW-Madison, Bird, Stewart, and Lightfoot Distinguished Graduate Fellowship . 2009-2010

Manuscripts

4. **Hamilton JJ**, Garcia SL, Bendall ML, Brown BS*, Dwulit-Smith JR, Moya F, Oyserman BO, Stevens SLR, Bertilsson S, Forest KT, Malmstrom RR, Stepanauskas R, Tringe SG, Woyke T, and KD McMahon. *Metabolic Network Analysis and Metatranscriptomics of a Cosmopolitan and Streamlined Freshwater Lineage.* In preparation. Available at `https://github.com/joshamilton/Hamilton_acI_2016`.
3. Garcia SL, Buck M, **Hamilton JJ**, Wurzbacher C, Rosenblad MA, McMahon KD, Grossart HP, Warnecke F, and A Eiler. *Model communities hint to promiscuous metabolic linkages between ubiquitous free-living freshwater bacteria.* bioRxiv. doi:10.1101/103838.
2. Lawson CE, Wu S, Bhattacharjee AS, **Hamilton JJ**, McMahon KD, Goel R, and DR Noguera. *Metabolic Activity in Anammox Granules Revealed through Metatranscriptomics.* Under review.
1. Rohwer RR, **Hamilton JJ**, Newton, RJ, and KD McMahon. *A Workflow which Leverages Ecosystem-Specific Databases to Achieve Fine-Level Taxonomic Resolution.* In preparation.

* indicates an undergraduate student author

Publications

5. **Hamilton JJ**, Calixto Contreras M*, and JL Reed. (2015) *Thermodynamics and H_2 Transfer in a Methanogenic, Syntrophic Community.* PLoS Computational Biology. 11(7): e1004364. doi:10.1371/journal.pcbi.1004364.
4. Vinay-Lara E, **Hamilton JJ**, Stahl B, Broadbent JR, Reed JL, and JL Steele. (2014) *Genome-Scale Reconstruction of Metabolic Networks of Lactobacillus casei ATCC 334 and 12A.* PLoS ONE. 9(11): e110785. doi:10.1371/journal.pone.0110785.
3. **Hamilton JJ** and JL Reed. (2014) *Software Platforms to Facilitate Reconstructing Genome-Scale Metabolic Networks.* Environmental Microbiology. 16(1): 49-59. doi:10.1111/1462-2920.12312.
2. **Hamilton JJ**, Dwivedi V*, and JL Reed. (2013) *Quantitative Assessment of Thermodynamic Constraints on the Solution Space of Genome-Scale Metabolic Models.* Biophysical Journal. 105(2): 512-522. doi:10.1016/j.bpj.2013.06.011.
1. **Hamilton JJ** and JL Reed. (2012) *Identification of Functional Differences in Metabolic Networks Using Comparative Genomics and Constraint-Based Models.* PLoS ONE. 7(4): e34670. doi:10.1371/journal.pone.0034670.

* indicates an undergraduate student author

Oral Presentations

6. **Hamilton JJ**. *Diving Into Freshwater Microbial Genomes to Infer Bacterial Traits.* Wisconsin Ecology 22nd Annual Fall Symposium. Madison, WI, October 2016.
5. **Hamilton JJ** and JL Reed. *Thermodynamics and H_2 Transfer in a Methanogenic, Syntrophic Community.* COBRA 2014: 3rd Conference on Constraint-Based Reconstruction and Analysis, Charlottesville, VA, May 2014.
4. **Hamilton JJ** and JL Reed. *Identification of Functional Differences in Cyanobacterial Metabolic Networks Using Constraint-Based Models.* American Society of Microbiology (ASM) General Meeting, Denver, CO, May 2013.
3. **Hamilton JJ**, Dwivedi V, and JL Reed. *Thermodynamics-Based Flux-Balance Analysis: Incorporation of Thermodynamic and Metabolomic Data Into Genome-Scale Constraint-Based Models.* American Institute of Chemical Engineers Annual Meeting, Pittsburgh, PA, October 2012.
2. **Hamilton JJ** and JL Reed. *Comparison of Microbial Metabolic Networks to Guide Background Strain Selection.* American Chemical Society National Meeting, San Diego, CA, March 2012.
1. **Hamilton JJ** and JL Reed. *Genome Alignment and Pair-Wise Comparison of Microbial Metabolic Networks Identifies Novel Potential Drug Targets.* American Institute of Chemical Engineers Annual Meeting, Minneapolis, MN, October 2011.

Poster Presentations

4. **Hamilton JJ**, Garcia SL, Bendall ML, Brown BS, Stevens SLR, Bertilsson S, Forest KT, Malmstrom RR, Stepanauskas R, Tringe SG, Woyke T, and KD McMahon. *Metabolic Network Analysis and Metatranscriptomics of a Cosmopolitan and Streamlined Freshwater Lineage.* 16th International Symposium on Microbial Ecology, Montreal, Canada. August 2016.

3. **Hamilton JJ**, Bendall M, Glavina del Rio T, Bertilsson S, Malmstrom R, Stepanauskas R, Tringe S, Woyke T, and KD McMahon. *Ecological Niches of Freshwater Actinobacteria Revealed through Comparative Genomics and Reverse Ecology.* Gordon Research Conference on Applied and Environmental Microbiology, Mount Holyoke College, South Hadley, MA. July 2015.

2. **Hamilton JJ**, He S, Bendall M, Glavina del Rio T, Bertilsson S, Malmstrom R, Stepanauskas R, Tringe S, Woyke T, and KD McMahon. *Ecological Niches of Uncultivated Freshwater Phyla Revealed Through Comparative Genomics.* UMX: 10th Annual Department of Energy Joint Genome Institute User Meeting, Walnut Creek, CA. March 2015.

1. **Hamilton JJ** and JL Reed. *Thermodynamics and H_2 Transfer in a Methanogenic, Syntrophic Community.* COBRA 2014: 3rd Conference on Constraint-Based Reconstruction and Analysis, Charlottesville, VA. May 2014.

Teaching Experience

- **Critical Analyses in Microbiology** — UW-Madison
  Instructor — *Spring 2016*
- **Environmental Microbiology** — UW-Madison
  Guest Lecturer — *Spring 2015, Spring 2017*
- **Computational Tools for Analyzing Microbial Metabolism** — ASM General Meeting
  Instructor — *May 2013*
- **Biochemical Engineering** — UW-Madison
  Guest Lecturer — *Fall 2011, Fall 2012, Fall 2015*
- **Biochemical Engineering** — UW-Madison
  Teaching Assistant — *Fall 2011*
- **Mass Transfer Operations** — UW-Madison
  Teaching Assistant — *Spring 2011*
- **Organic Chemistry** — CWRU
  Supplemental Instructor — *Fall 2008*
- **Chemistry of Materials** — CWRU
  Supplemental Instructor — *Fall 2007, Spring 2008, Spring 2009*

Mentoring Experience

- **Robin R. Rohwer** — UW-Madison
  Ph.D. Student — *Fall 2015 to present*
- **Christopher E. Lawson** — UW-Madison
  Ph.D. Student — *Fall 2015 to present*
- **Brittany S. Brown** — UW-Madison
  Undergraduate Student — *Summer 2015*
- **Montserrat Calixto Contreras** — UW-Madison
  Undergraduate Student — *Fall 2013*
- **Stan Anderson** — UW-Madison
  Undergraduate Student — *Spring 2012*
- **Vivek Dwivedi** — UW-Madison
  Undergraduate Student — *Summer 2011*
- **Emely Y. Medina Chapparo** — UW-Madison
  Undergraduate Student — *Summer 2010*

Academic and Professional Service

- Reviewer for the following journals:
  - Biochemical Engineering Journal
  - Journal of Bacteriology
  - PLoS Computational Biology
  - PLoS ONE

References

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