

JONATHAN P. BADALAMENTI

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EDUCATION

Ph.D. in Microbiology, Arizona State University, 2013

B.S. in Biochemistry and Molecular Biology with honors, Pennsylvania State University, 2007

TEACHING INTERESTS

Microbial physiology and metabolic diversity

Microbial phylogenomics and the Tree of Life

Communicating microbiology

Bioinformatics and analysis of genomics data

Computational literacy for biologists

TEACHING EXPERIENCE

Teaching Assistant, Department of Microbiology, University of Minnesota, 2014-2016

MICB 4111 – Microbial Physiology and Genetics

Instructor, Intermediate Bioinformatics Course, Bodega Marine Laboratory (UC Davis), 2016

TnSeq analysis of microbial genomes. Lesson URL: <https://github.com/jbadomics/tnseq>

Assistant Instructor, Data Carpentry, 2015

Two-day genomics data workshop for plant biologists, ASPB Meeting, Minneapolis

Tutorial Instructor, Minnesota Supercomputing Institute, University of Minnesota, 2014-2015

Approaches for analyzing and assembling PacBio single-molecule real-time (SMRT) sequencing data (6 hands-on computer workshops)

Teaching Assistant, Department of Microbiology, Arizona State University, 2010

MIC 206 – Introductory Microbiology Laboratory (2 sections)

RESEARCH INTERESTS

Comparative microbial genomics and bioinformatics

Applications of long read sequencing in metagenomics

Metagenomic assembly and binning approaches

Microbial electrochemistry

PUBLICATIONS

PEER-REVIEWED JOURNAL ARTICLES

Badalamenti JP, Summers ZM, Chan CH, Gralnick JA, Bond DR. **2016**. Isolation and genomic characterization of ‘*Desulfuromonas soudanensis* WTL’, a metal- and electrode-respiring bacterium from anoxic deep subsurface brine. *Frontiers in Microbiology* doi:10.3389/fmicb.2016.00913.

Badalamenti JP, Erickson J, Salomon CE. **2016**. Complete genome of *Streptomyces albus* SM254, a potent antagonist of the White Nose Bat Syndrome pathogen *Pseudogymnoascus destructans*. *Genome Announcements* 4:e00290-16.

Lusk BG, **Badalamenti JP**, Parameswaran P, Bond DR, Torres CI. **2015**. Draft genome sequence of the gram-positive thermophilic iron reducer *Thermincola ferriacetica* strain Z-0001^T. *Genome Announcements* 3:e01072-15.

Badalamenti JP, Hunter RC. **2015**. Complete genome sequence of *Achromobacter xylosoxidans* MN001, a cystic fibrosis airway isolate. *Genome Announcements* 3:e00947-15.

Chan CH, Levar CE, Zacharoff L, **Badalamenti JP**, Bond DR. **2015**. Scarless genome editing and stable inducible expression vectors for *Geobacter sulfurreducens*. *Applied and Environmental Microbiology* 81:7178-7186.

- Badalamenti JP**, Krajmalnik-Brown R, Torres CI, Bond DR. **2015**. Genomes of *Geoalkalibacter ferrihydriticus* Z-0531^T and *Geoalkalibacter subterraneus* Red1^T, two haloalkaliphilic metal-reducing Deltaproteobacteria. *Genome Announcements* **3**:e00039-15.
- Badalamenti JP**, Bond DR. **2015**. Complete genome of *Geobacter pickeringii* G13^T, a metal-reducing isolate from sedimentary kaolin deposits. *Genome Announcements* **3**:e00038-15.
- Badalamenti JP**, Torres CI, Krajmalnik-Brown R. **2014**. Coupling dark metabolism to electricity generation using photosynthetic cocultures. *Biotechnology and Bioengineering* **111**:223–231.
- Badalamenti JP**, Krajmalnik-Brown R, Torres CI. **2014**. Generation of high current densities by pure cultures of anode-respiring *Geoalkalibacter* spp. under alkaline and saline conditions in microbial electrochemical cells. *mBio* **4**:e00144-13.
- Badalamenti JP**, Torres CI, Krajmalnik-Brown R. **2013**. Light-responsive current generation by phototrophically enriched anode biofilms dominated by green sulfur bacteria. *Biotechnology and Bioengineering* **110**:1020-1027.
*selected as an Editors' Choice Feature
- Hartmann EM, **Badalamenti JP**, Krajmalnik-Brown R, Halden RU. **2012**. Quantitative PCR for tracking megaplasmid-borne biodegradation potential of a model sphingomonad. *Applied and Environmental Microbiology* **78**:4493-4496.
- Sheng J, Kim H, **Badalamenti JP**, Zhou C, Sridharakrishnan S, Krajmalnik-Brown R, Rittmann BE, Vannela R. **2011**. Effects of temperature shifts on growth rate and lipid characteristics of *Synechocystis* sp. PCC6803 in a bench-top photobioreactor. *Environmental Science and Technology* **102**:11218-11225.
- Weiss LE, **Badalamenti JP**, Weaver LJ, Tascone AR, Weiss PS, Richard T, Cirino PC. **2007**. Engineering motility as a phenotypic response to LuxI/R-dependent quorum sensing in *Escherichia coli*. *Biotechnology and Bioengineering* **100**:1251-55.
- Badalamenti JP**, Weiss LE, Buckno C, Richard TL, Weiss PS, Cirino PC. **2007**. Synthetic sports: A bacterial relay race. *IET Synthetic Biology* **1**:61-63.

BOOK CHAPTERS

- Badalamenti JP**, Zhang H, Parameswaran P, Badalamenti JP, Rittmann BE, Krajmalnik-Brown R. **2011**. Integrating high-throughput pyrosequencing and quantitative real-time PCR to analyze complex microbial communities. *Methods in Molecular Biology* **733**:107-128.

MANUSCRIPTS IN PREPARATION

- Badalamenti JP**, Bond DR. A little goes a long way: Long reads to capture complete genomes from an enriched deep subsurface metagenome.

OPEN SOURCE COMPUTER SCRIPTS AND BIOINFORMATICS TRAINING LESSONS

<https://github.com/jbadomics>

PRESENTATIONS

INVITED PRESENTATIONS

- Unlocking genomic secrets of the unseen microbial majority. Biology Department Seminar Series, Carleton College, Northfield, MN. 26 October 2015.
- Metabolic novelty in metal reducers from the deep subsurface revealed by long read metagenomics. American Society for Microbiology North Central Branch Meeting, La Crosse, WI. 24 October 2015.
- Deep sequencing in the deep subsurface: *De novo* metagenomic assembly to recover complete genomes from the Soudan Iron Mine. Pacific Biosciences User Group Meeting, Baltimore, MD. 17 June 2015.

ORAL PRESENTATIONS

- Capturing complete genomes of novel halophilic metal reducers from the deep subsurface: Short and long read metagenomics of Soudan Mine communities enriched on electrodes. 5th International Society for Microbial Electrochemistry and Technology Meeting, Tempe, AZ. 2 October 2015.
- Using microbial electrochemical cells for selective enrichment of novel current-producing anoxygenic photosynthetic bacteria. 243rd American Chemical Society National Meeting, San Diego, CA. 28 March 2012.

POSTER PRESENTATIONS

- Metagenomes of native and electrode-enriched microbial communities from the Soudan Iron Mine.
presented twice:
American Society for Microbiology, 115th General Meeting, New Orleans, LA. 1 June 2015.

Deep Carbon Observatory Deep Life Community Meeting, Lisbon, Portugal. 7 May 2015.
Genomes of two haloalkaliphilic metal-reducing bacteria in the context of the *Geobacteraceae* pangenome. American Society for Microbiology, 114th General Meeting, Boston, MA. 20 May 2014.
Controlled cocultures reveal mechanisms of light-responsive electricity generation in photosynthetic microbial electrochemical cells fed with sulfide. American Society for Microbiology, 113th General Meeting, Denver, CO. 21 May 2013.
Electrochemical characterization of novel anode-respiring bacteria producing high current densities under saline and alkaline conditions. North American ISMET Meeting, Ithaca, NY. 9 October 2012.
Selective enrichment of anoxygenic photosynthetic bacteria and light-responsive current generation at the anode of a microbial electrochemical cell. 3rd International Microbial Fuel Cell Conference, Leeuwarden, Netherlands. 6 June 2011.

AWARDS AND HONORS

- Updraft Award, University of Minnesota Informatics Institute, September 2016
- University of Minnesota Microbial and Plant Genomics Institute Travel Grant, December 2014
- American Society for Microbiology Student Travel Award, 113th General Meeting, May 2013
- Best Graduate Student Poster, ASM Arizona-Southern Nevada Branch Meeting, April 2013
- American Society for Microbiology Scientific Writing and Publishing Institute Participant, March 2013
- **United States Environmental Protection Agency (EPA) Science to Achieve Results (STAR) Fellow**, August 2010 – May 2013
- Edward and Linda Birge Memorial Travel Award, ASU School of Life Sciences, June 2011
- First Place Poster Prize, Science Foundation Arizona (SFAz) Grand Challenges Summit, May 2011
- Best Graduate Student Oral Presentation, ASM Arizona-Southern Nevada Branch Meeting, April 2011
- ASU School of Life Sciences Travel Award, Sept. 2011, May 2009
- **Science Foundation Arizona (SFAz) Graduate Fellow**, August 2007-August 2009

PROFESSIONAL SERVICE

BioTechnology Institute – University of Minnesota

Social media contributor (2015-present)

Undergraduate student mentor, Michael Sharp, B.S. Biochemistry (2014-2015)

Minnesota Academy of Science

Junior and High School Science Fair volunteer judge (2014-2015)

School of Life Sciences – Arizona State University

Graduate student recruitment assistant (2011-2013)

Biodesign Institute – Arizona State University

Graduate research mentor (2011-2013), Oluyomi Ajulo, M.S. Chemical Engineering

Fulton Undergraduate Research Initiative – Arizona State University

Undergraduate research mentor (2008-2011), Galen Toby Johnson-Bates, combined B.S.-M.S. Chemical Engineering

Reviewer for Journals

Applied Microbiology and Biotechnology

ISME Journal

Journal of Microbiological Methods

Environmental Science and Technology

Journal of Applied Microbiology

Water Research

PROFESSIONAL MEMBERSHIPS

ASM – American Society for Microbiology

DCO – Deep Carbon Observatory

ISMET – International Society for Microbial Electrochemistry and Technology

Software Carpentry

Data Carpentry

REFERENCES

DANIEL R. BOND ▪ Postdoctoral Research Supervisor

Professor, Department of Plant & Microbial Biology
College of Biological Sciences, University of Minnesota – Twin Cities
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CÉSAR. I TORRES ▪ Ph.D. Co-advisor

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