

## STEVEN D. BROWN

### CONTACT INFORMATION

Biosciences Division,  
Oak Ridge National Laboratory  
P.O. Box 2008 MS6038  
Oak Ridge, TN 37831-6038

Office phone: (865) 576-2368  
Facsimile: (865) 576-8646  
E-mail: [brownsd@ornl.gov](mailto:brownsd@ornl.gov)

### EDUCATION/TRAINING

| Institution and Location         | Degree | Year | Field of Study |
|----------------------------------|--------|------|----------------|
| University of Otago, New Zealand | B.S.   | 1996 | Microbiology   |
| University of Otago, New Zealand | Ph.D.  | 2002 | Microbiology   |

### POSITIONS AND EMPLOYMENT

2011- **Joint Faculty Assistant Professor**, Department of Biochemistry and Cellular and Molecular Biology  
University of Tennessee

2009- **Adjunct Faculty Member**; Genome Sciences and Technology (GST) Graduate School, University of  
Tennessee, Knoxville, Tennessee

2008- **Functional team leader for RNA profiling**; BSD and BESC

2008- **Staff Research Scientist**; Microbial Ecology & Physiology Group; ORNL

2005- **R&D Associate Staff Scientist**; Microbial Ecology & Physiology Group; ORNL

2002-2005 **Postdoctoral Research Associate**; Environmental Sciences Division; ORNL.

2001 **Demonstrator** for "Hands on Science " course for high school students.

1997-2001 Undergraduate laboratory **Demonstrator** (including Biol115, Gene211, Micr211).

1995 **Laboratory Assistant**, Professor Gerald Tannock (part-time).

### OTHER EXPERIENCE AND PROFESSIONAL MEMBERSHIPS

2005- Institutional Biosafety Committee

2004-2005 ESD Safety Committee

2002 Development of teaching material for Hazard Analysis and Management papers.

2003- American Society for Microbiology

### HONORS AND AWARDS

2011 ORNL Biosciences Distinguished Achievement Award in Recognition for Excellence in Science

2011 ORNL Significant Event Award "Discovery of a single microbial gene linked to increase ethanol tolerance"

2011 ORNL Significant Event Award "Successfully negotiating the DOE Renewal Process for the BioEnergy  
Science Center (BESC) to secure funding for five additional years" as part of a 16 person team.

2007 ORNL Significant Event Award "Setup and operation of multi-species chemostat" T. J. Phelps, S. D.  
Brown, D. M. Klingeman, S. Carroll, L A. Fagan and S. Cline

1995-96 AgResearch Summer Scholarship

### PATENTS

Brown, S., Guss, A., Yang, S., Karpinets, T., and Lynd, L. Nucleic acid molecules conferring enhanced ethanol tolerance and microorganisms having enhanced tolerance to ethanol. Provisional patent application 61/346,660.

Yang, S. & Brown, S.D. 2009. Microorganisms having enhanced resistance to acetate. Non-provisional patent application 61/173,649.

Yang, S. & Brown, S.D. 2009. Microorganisms having enhanced tolerance to inhibitors and stress. Non-provisional patent application. No. 61/184,961.

### SELECTED PUBLICATIONS (>50)

- Parks, J.M. et al. The Genetic Basis for Bacterial Mercury Methylation. *Science* **In press** (2013).
- Syed, M.H. et al. BESC knowledgebase public portal. *Bioinformatics* doi: **10.1093/bioinformatics/bts016** (2012).
- Mosher, J.J. et al. Characterization of the *Deltaproteobacteria* in contaminated and uncontaminated stream sediments and identification of potential mercury methylators. *Aquatic Microbial Ecol.* **66**, 271-282 (2012).
- Mosher, J.J. et al. Microbial community succession during lactate amendment and electron-acceptor limitation reveals a predominance of metal-reducing *Pelosinus* spp. *Appl. Environ. Microbiol.* **78**, 2082-2091 (2012).
- Moberly, J.G. et al. Role of morphological growth state and gene expression in *Desulfovibrio africanus* strain Walvis Bay mercury methylation. *Environ. Sci. Technol.* **46**, 4926-4932 (2012).
- Kostka, J.E. et al. Genome sequences for six *Rhodanobacter* strains isolated from soils and the terrestrial subsurface with variable denitrification capabilities. *J. Bacteriol.* **194**, 4461-4462 (2012).
- Hurt, R.A., Brown, S.D., Podar, M., Palumbo, A.V. & Elias, D.A. Sequencing intractable DNA to close microbial genomes. *PLoS One* **7**, 7 (2012).
- Brown, S.D. et al. Draft genome sequences for two metal-reducing *Pelosinus fermentans* strains isolated from a Cr(VI) contaminated site and for type strain R7. *J. Bacteriol.* **194**, 5147-5148 (2012).
- Brown, S.D. et al. Draft genome sequence for *Microbacterium laevaniformans* strain OR221, a bacterium tolerant to metals, nitrate, and low pH. *J. Bacteriol.* **194**, 3279-3280 (2012).
- Vishnivetskaya, T.A. et al. Mercury and other heavy metals influence bacterial community structure in contaminated tennessee streams. *Appl. Environ. Microbiol.* **77**, 302-311 (2011).
- Hauser, L.J. et al. The complete genome sequence and updated annotation of *Desulfovibrio alaskensis* G20. *J. Bacteriol.* **193**, 4268-4269 (2011).
- Gilmour, C.C. et al. Sulfate-reducing bacterium *Desulfovibrio desulfuricans* ND132 as a model for understanding bacterial mercury methylation. *Appl. Environ. Microbiol.* **77**, 3938-3951 (2011).
- Brown, S.D. et al. Genome sequence of the mercury-methylating and pleomorphic *Desulfovibrio africanus* strain Walvis Bay. *J. Bacteriol.* **193**, 4037-4038 (2011).
- Brown, S.D. et al. Mutant alcohol dehydrogenase leads to improved ethanol tolerance in *Clostridium thermocellum*. *Proc. Natl. Acad. Sci. USA* **108**, 13752-13757 (2011).
- Brown, S.D. et al. Genome sequence of the mercury-methylating strain *Desulfovibrio desulfuricans* ND132. *J. Bacteriol.* **193**, 2078-2079 (2011).
- Yang, S.H. et al. Paradigm for industrial strain improvement identifies sodium acetate tolerance loci in *Zymomonas mobilis* and *Saccharomyces cerevisiae*. *Proc. Natl. Acad. Sci. U.S.A.* **107**, 10395-10400 (2010).
- Porat, I. et al. Characterization of archaeal community in contaminated and uncontaminated surface stream sediments. *Microbial Ecol.* **60**, 784-795 (2010).
- Pelletier, D.A. et al. Engineered cerium oxide nanoparticles: Effects on bacterial growth and viability. *Appl. Environ. Microbiol.* **76**, 7981-7989 (2010).
- Green, S.J. et al. Denitrifying bacteria isolated from terrestrial subsurface sediments exposed to mixed-waste contamination. *Appl. Environ. Microbiol.* **76**, 3244-3254 (2010).

### SYNERGISTIC ACTIVITIES

Ad-hoc reviewer for journals such as *Microbial Ecol.*, *BMC Microbiol.*, *Arch. Microbiol.*, *PLOS One*, *Environ. Sci. Technol.*, *Appl. Environ. Microbiol.*, *J. Biol. Eng.*, *Frontiers in Microbiology*, and others. Reviewer for proposals such as NSF's Ecological Biology Cluster and its Analytical and Surface Chemistry Program, DOE BER and European ERA-NET "Industrial Biotechnology" (ERA-IB) grants. Lecturer for UTK Genome Sciences and Technology (GST) Graduate School in 2011-2013.

### GRADUATE AND POSTDOCTORAL ADVISORS AND ADVISEES

CW Ronson (Thesis advisor, University of Otago, NZ); J Zhou (Post-doc advisor, University OK); I Porat (former post-doc, Ineos Bio); S Yang (former post-doc, NREL); J Yi (former post-doc, RIST, South Korea); S Utturkar (Genome Sciences and Technology Ph.D. Student , UT); K. B. Sander (CIRE Ph.D. Student , UT).