

## Elizabeth Adrienne Burgess

burgess@srel.edu

University of Georgia

Savannah River Ecology Laboratory (SREL)  
Drawer E (mailing), SRS Bldg. 737A (shipping)  
Aiken, SC 29802 (mailing), 29808 (shipping)

Office: 803.725.2752  
Fax: 803.725.3309  
Cell: 706.614.5944

### Education

2003-2009 Ph.D., Microbiology; GPA, 3.83; University of Georgia, Athens, GA  
2001-2003 M.S., Ecology; GPA, 3.85; University of Georgia, Athens, GA  
1994-1999 B.S., Forestry; 2<sup>nd</sup> major, English; Minors, Chemistry and Biology; GPA, 3.12;  
Stephen F. Austin State University, Nacogdoches, TX

### Research

2009-present Research Professional II – University of Georgia, Aiken, SC

- Focus: Constructed wetlands for bioremediation, prokaryote community ecology, elemental cycling
- Skills acquired: Staff management, budgeting, student mentoring

2001-2009 Graduate Research Assistant – University of Georgia, Athens, GA and Aiken, SC

Ph.D. dissertation research

- Focus: Geomicrobiology, prokaryote community ecology, sulfur-cycling
- Skills acquired: Metabolic measurements, metals analysis, prokaryote isolation methods, stable isotope analysis, coordination for field expeditions, protocol development, protocol library maintenance

M.S. thesis research

- Focus: Ecological genetics of bacteria in the environment
- Skills acquired: Microbiological field sampling, molecular methods, data collection, analysis and reporting, reference library maintenance

### Teaching

2006-present Adjunct Faculty – Aiken Technical College, Aiken, SC

- Biological Science I
- Microbiology

2004-2005 Teaching Assistant/Laboratory Instructor – University of Georgia, Athens, GA

- Principles of Biology II
- Microbiology & Healthcare
- Ecological Basis of Environmental Issues (volunteer position)

1998-1999 Laboratory Instructor – Stephen F. Austin State University, Nacogdoches, TX

- General Physics

1998-1998 Chemistry Tutor – Stephen F. Austin State University, Nacogdoches, TX

- General Chemistry I and II

### Field Work

2008-present Regularly scheduled water and sediment sampling in constructed wetlands for regulatory and research purposes on the Savannah River Site, Aiken, SC

## Field Work (con't)

- 2004-2006 Participation in expeditions as a graduate research assistant for NSF Microbial Observatory, Uzon Valley, Kamchatka, Far East Russia, August-September
- 1999 Hack site attendant for The Peregrine Fund, Laguna Atascosa National Wildlife Refuge, Texas, June-September

## Training and Workshops

- 2005 Workshop: Kamchatka 2005: Biodiversity, Molecular Biology, and Biogeochemistry of Thermophiles, August 20-26, Petropavlovsk-Kamchatksky, Russia
- 2003 Workshop and Training: Extremophile Research: Theory and Techniques, July 21-24 Center of Marine Biotechnology, University of Maryland

## Publications

### Peer-Reviewed

- 2007 Burgess, E.A., I.D. Wagner, and J. Wiegel. *Thermal Environments and Biodiversity*. Ch 2, pages 13-29 in *Physiology and Biochemistry of Extremophiles*, C. Gerday and N. Glansdorff eds. American Society for Microbiology Press, Washington, DC.

### Other Publications

- 2009 Burgess, E.A. *Geomicrobiological description of two contemporary hydrothermal pools in Uzon Caldera, Kamchatka, Russia, as models for sulfur biogeochemistry*. Ph.D. Dissertation, Microbiology, University of Georgia, Athens, GA. Committee: J. Wiegel (chair), S.B. Joye, G.L. Mills, W.B. Whitman.
- 2003 Burgess, E.A. *An analysis of mercury resistance genes in stream sediment bacteria, using terminal restriction fragment length polymorphism (TRFLP)*. M.S. Thesis, Ecology, University of Georgia, Athens, GA. Committee: J.V. McArthur (chair), T.C. Glenn, L.J. Shimkets.

## Presentations

- 2010 Mills, G.L., S.M. Harmon, **E.A. Burgess**, T. Ciravolo, T. Murphy, A. Whitley. *Biogeochemical changes in a constructed wetland receiving metal contaminated waters during the initial 2 years of development*. Carolinas and Southeast SETAC Joint 2010 Chapter Meeting March 25-27, Athens, GA, Program and Abstracts; pg 6.
- 2009 **Burgess, E.A.** *Models for sulfur cycling from a geomicrobiological description of two hydrothermal pools*. University of Georgia, Ph.D. Defense Presentation, December 4, 2009.
- 2009 **Burgess, E.A.** *Models for sulfur cycling from a geomicrobiological description of two hydrothermal pools*. Savannah River Ecology Laboratory, University of Georgia, Dec. 2, 2009.
- 2005 **Burgess, E.A.** *In search of sulfate-reducing prokaryotes in the Uzon Caldera*. Kamchatka Workshop 2005: Biodiversity, Molecular Biology and Biogeochemistry of Thermophiles, August 20-26, 2005.
- 2005 **Burgess, E.A.** *For the love of cold – An investigation of Artic sea-ice bacteria in two seasons*. UGA Department of Microbiology, Departmental Seminar, February 8, 2005.

**Presentations (con't)**

- 2003 **Burgess, E.A.** *Through the looking glass, an analysis of bacterial mercury resistance genes using TRFLP, or an analysis of TRFLP using bacterial mercury resistance genes.* University of Georgia, M.S. Defense Presentation, August 2003.

**Posters**

- 2009 Mills, G.L., S.M. Harmon, N. Ethridge, T. Ciravolo, **E. Burgess**, J. Gladden, E. Nelson. *Biogeochemical changes in a constructed wetland receiving metal contaminated waters during the initial year of development.* SETAC North America 30<sup>th</sup> Annual Meeting, 19-23 November, New Orleans, LA, Abstracts Book; pg 250.
- 2008 **Burgess, E.A.**, J.M. Unrine, J. Wiegel, G.L. Mills. *Microbial phospholipid fatty acid (PLFA) profiles of core samples from two geochemically distinct thermal pools in Kamchatka, Far East Russia.* Abstracts of the 108<sup>th</sup> General Meeting of the American Society for Microbiology, 2008; N-153.
- 2007 **Burgess, E.A.**, W. Zhao, A.L. Neal, J. Wiegel. Comparison of hot spring sediment communities using 16S rRNA gene sequences. Abstracts of the 107<sup>th</sup> General Meeting of the American Society for Microbiology, 2007; N-308
- Schroeder, Paul A., Elizaveta Bonch-Osmolovskaya, **Elizabeth Burgess**, Albert Colman, Douglas Crowe, Julie Fiser, Maggie Hodges, Elizabeth Hollingsworth, Gennady Karpov, Ilya Kublanov, Jennifer Kyle, Gary Mills, Andrew Neal, Nikolai Pimenov, Frank Robb, Christopher Romanek, Tatiana Slepova, Tatyana Sokolova, Elisabeth Spencer, Stephen Techtmann, Isaac Wagner, Juergen Wiegel, Noah Wittman, Chuanlun Zhang, and Weidong Zhao. 2007 Nitrogen And Smectites From Terrestrial Hot Springs In The Uzon Caldera, Kamchatka, Far-Eastern Russia, The Clay Minerals Society Annual meeting, Sante Fe, NM. Abstract with programs.
- 2006 **Burgess, E.A.**, J. Unrine, A.L. Neal, V. Samarkin, S.B. Joye, J. Wiegel. Arkashin(A) to Zavarzin(Z) – Geochemical and microbiological characterization of core samples collected at two thermal pools in Uzon Caldera, Kronotsky Zapovednik, Kamchatka. EOS Transactions AGU 87(52). American Geophysical Union Fall Meeting 2006.
- Zhao, W, C.S. Romanek, **E.A. Burgess**, J. Wiegel, G. Mills, C.L. Zhang. Using phospholipids and stable carbon isotopes in assess microbial community structures and carbon cycle pathways in Kamchatka hot springs. EOS Transactions AGU 87(52). American Geophysical Union Fall Meeting 2006
- Burgess, E.A.**, A.L. Neal, J.K.W. Wiegel. Distribution, diversity, and sulfidogenesis of prokaryotes in the Uzon Caldera. Poster. 1<sup>st</sup> Annual Academy of the Environment Symposium, University of Georgia, Oct. 23-24, 2006.
- Burgess, E.A.**, A.L. Neal, J.K.W. Wiegel. Distribution, diversity, and sulfidogenesis of prokaryotes in the Uzon Caldera. Poster 10, SREL Graduate Student Symposium, 30.June.2006.
- Zhao, W., C.S. Romanek, J. Wiegel, **E. Burgess**, A. Pearson, G. Mills, and C. Zhang. Lipids and 13C stable isotopes of Kamchatka hot springs microbial communities. Presentation 5, SREL Graduate Student Symposium, 30.June.2006.

### Posters (con't)

- 2006 **Burgess, E.A.**, A.L. Neal, V. Samarkin, S.B. Joye, J. Wiegel. Enrichment culture, radiotracer activity measurement, and 16S rRNA gene sequence evidence for sulfidogenic prokaryotes in Uzon Caldera, Kamchatka, Far East Russia. Abstracts of the 106<sup>th</sup> General Meeting of the American Society for Microbiology, 2006; 106: N-059
- 2005 **Burgess, E.A.**, E. Hollingsworth, A. Neal. Changes in Prokaryotic Communities across a Geochemical Gradient in a Hot Spring Sediment Core. Poster 16, SREL Graduate Student Symposium, 15.July.2005.
- Burgess, E.A.**, J. Wiegel, D. Crowe, A. Neal. Microbial TRFLP Profiles across a Geochemical Gradient, as Determined from a Hot Spring Sediment Core Collected in Kamchatka, Far East Russia. Abstracts-of-the-105<sup>th</sup> General-Meeting-of-the-American-Society-for-Microbiology. 2005; 105: N-261
- 2004 **Burgess, E.A.**, A. Neal, J. Wiegel. Isolation and Characterization of Sulfate-Reducing Bacteria from Uzon Valley Hydrothermal Pools. Presentation 16, Savannah River Ecology Laboratory Graduate Student Symposium, July 9, 2004.
- 2003 **Burgess, E.A.**, C.J. King, T.C. Glenn, J V. McArthur. Gene trees of bacterial mercury resistance genes indicate unique local selection. Poster, Evolution 2003, University of California, Chico, California.
- Burgess, E.A.**, T.C. Glenn, J V. McArthur. An analysis of the diversity of mercury resistance genes in stream sediment bacteria on the Savannah River Site using terminal restriction fragment length polymorphism (t-RFLP). Abstracts-of-the-103<sup>rd</sup> General-Meeting-of-the-American-Society-for-Microbiology. 2003; 103: N-261

### Honors and Awards

- Graduate School Research Assistantship, University of Georgia (2008)
- Graduate School Travel Award, University of Georgia (2008, 2006)
- Franklin College of Arts & Sciences Research Assistantship, University of Georgia (2007)
- Department of Microbiology Travel Award, University of Georgia (2007)
- 1<sup>st</sup> Place Poster Presentation Award, Graduate Student Symposium, SREL (2006)
- Young Researcher Travel Award, National Science Foundation (2005)
- SREL Research Assistantship, University of Georgia (2001-2003)
- Undergraduate Scholarship, Stephen F. Austin Alumni Association, SFASU (1998-1999)
- Undergraduate Scholarship, Kingwood Garden Club (1998-1999)
- Undergraduate Scholarship, Houston Coating Society (1995-1999)
- Induction to Forestry Honor Society, Xi Sigma Pi (1997)

### Outreach and Service

- Module development for tours of the Savannah River Ecology Laboratory, University of Georgia, Aiken, SC, open to all employees of the Savannah River Site

### **Outreach and Service (con't)**

- Photos from Kamchatka – an exhibition of personal photographs taken in Kamchatka, Far East Russia. Exhibition included a flyer briefly describing the associated research project and contact information for questions. Open to the public at Jittery Joe's Coffee, Athens, GA, Dec. 3 – 17, 2004, and Starbucks Coffee, Athens, GA, Feb. 1-28, 2005.
- Microbe Zoo Open House: When Microbes Attack... Your Garbage! – a hands-on demonstration presenting the role of microorganisms in composting and bioremediation. Assisted Dr. Wendy Dustman with organization and presentation. Open to middle and high school students participating in the 57<sup>th</sup> Georgia Science and Engineering Fair. University of Georgia, Athens, GA, Apr. 8, 2005.
- Volunteer lab instructor – Institute of Ecology, University of Georgia, Athens, GA
- Session moderator – Southeastern Ecology & Evolution Meeting, Georgia Institute of Technology, Atlanta, GA

### **Professional Memberships**

2009-present International Society for Microbial Ecology (ISME)  
2007-present American Association for the Advancement of Science (AAAS)  
2006-present American Geophysical Union (AGU)  
2002-present American Society for Microbiology (ASM)  
2002-2003 North American Benthological Society (NABS)  
1997-present Xi Sigma Pi, Forestry Honor Society