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### **Research Interests**

Molecular microbial ecology. Employing molecular techniques to explore the diversity of microbial assemblages in natural systems through the investigation of community structure, functional gene diversity, and the evolution of biogeochemically relevant processes.

### **Professional Preparation**

James Madison University	B.S. Biology	1994
University of Georgia	M.S. Microbiology	1997
University of Georgia	Ph.D. Marine Sciences	2001

### **Professional Positions**

2005-	Assistant Professor, Department of Microbiology, University of Tennessee
2005-	Faculty member, ORNL-UTK Graduate Program in Genome Science and Technology

### **Academic Honors & Awards**

2003	NSF Postdoctoral Fellowship in Microbial Biology
2003	Travel Grant Award (American Society for Microbiology/The Institute for Genomic Research 3 <sup>rd</sup> Annual Small Genomes Meeting)
2003	Student-Participant Award to attend the EU-US Molecular Biology for the Environment Course (Feb 2-15, Madrid, Spain)
2002	Travel Grant Award (ORNL 9 <sup>th</sup> Annual Genomics Meeting)
2000	Student Travel Grant Award (American Society for Microbiology)
1997	Outstanding Teaching Assistant Award (UGA)
1996	Excellence in Teaching Award (UGA)
1992	Undergraduate Research Fellowship in Microbiology (American Society For Microbiology)

### **Professional Societies**

American Society of Microbiology  
American Society of Limnology and Oceanography

### **Publications**

Moran, M. A., R. Belas, M. A. Schell, J. M. González, F. Sun, B. J. Binder, J. Edmonds, W. Ye, B. Orcutt, E. C. Howard, C. Meile, W. Palefsky, A. Goesmann, Q. Ren, I. Paulsen, L. E. Ulrich, L. S. Thompson, E. Saunders and **A. Buchan**. *accepted*. Ecological Genomics of Marine Roseobacters. Applied and Environmental Microbiology

LeCleur, G. R., **A. Buchan**, J. Maurer, M.A. Moran, and J. T. Hollibaugh. 2007. Comparison of chitinolytic enzymes from an alkaline, hypersaline lake and an estuary. *Environmental Microbiology* 9:197-205.

E. C. Howard, J. R. Henrikson, **A. Buchan**, C. R. Reisch, H. Bürgmann, R. Welsh, W. Ye, J. M. Gonzalez, K. Mace, S. B. Joye, R. P. Kiene, W. B. Whitman, and M. A. Moran. 2006. Bacterial Taxa Limiting Sulfur Flux from the Ocean. *Science* 314:649-652.

**Buchan, A.** and L. N. Ornston. 2005 . When coupled to natural transformation, PCR-mutagenesis is made less random by mismatch repair. *Applied and Environmental Microbiology*. 71:7610-7612.

**Buchan, A.**, J. M. González, and M. A. Moran. 2005. An Overview of the Marine *Roseobacter* Lineage [MiniReview]. *Applied and Environmental Microbiology*. 71:5665-5677.

Poretsky, R. S., N. Bano, **A. Buchan**, G. LeCleur, J. Kleikemper, M. Pickering, M.A. Moran, and J. T. Hollibaugh. 2005. Analysis of microbial gene transcripts in environmental samples. *Applied and Environmental Microbiology*. 71:4121-4126.

Moran, M A., **A. Buchan**, J. M. González, J. F. Heidelberg, J. Henriksen, W. B. Whitman, R. P. Kiene, J. A. Eisen, G. King, M. R. Belas, C. Fuqua, E. Rahe, W. Sheldon, W. Ye, J. Carlton, L. Brinkac, M. Lewis, S. Johri, B. Weaver, D. Rasko, I. Paulsen, Q. Ren, and N. Ward. 2004. Genome Sequence from an Ecologically Significant Marine Bacterial Taxon. *Nature*. 432:910-913.

LeCleur, G. R., **A. Buchan**, and J. T. Hollibaugh. 2004. Chitinase gene sequences retrieved from diverse aquatic habitats reveal environment-specific distributions. *Applied and Environmental Microbiology*. 70:6977-6983.

**Buchan, A.**, E. L. Neidle, and M. A. Moran. 2004. Organization of the b-ketoadipate pathway in members of the marine *Roseobacter* lineage. *Applied and Environmental Microbiology* 70: 1658-1668.

**Buchan, A.**, S. Y. Newell, M. Butler, E. J. Biers, J. T. Hollibaugh and M. A. Moran. 2003. Dynamics of bacterial and fungal communities on decaying salt marsh grass. *Applied and Environmental Microbiology*. 69:6676-6687.

J. M. Gonzalez, J. S. Covert, W. B. Whitman, J. R. Henriksen, F. Mayer, B. Scharf, R. Schmitt, **A. Buchan**, J. A. Fuhrman, R. P. Kiene and M. A. Moran. 2003. *Silicibacter pomeroyi* sp. nov. and *Roseovarius nubinhibens* sp. nov., dimethylsulfoniopropionate-demethylating bacteria from marine environments. *International Journal of Systematic Bacteriology*. 53:1261-1269.

Moreta, J. I. L., S. Y. Newell, **A. Buchan**, and M. A. Moran. 2003. Diversity of ascomycete laccase gene sequences in a southeastern U.S. saltmarsh. *Microbial Ecology*. 45:270-281.

**Buchan, A.**, S. Y. Newell , J. I. Moreta, and M. A. Moran. 2002. Molecular characterization of bacterial and fungal decomposer communities in a southeastern U.S. salt marsh. *Microbial Ecology*. 43: 329-340.

**Buchan, A., E. L. Neidle and M. A. Moran. 2001.** Diversity of the ring-cleaving dioxygenase gene *pcaH* in a salt marsh bacterial community. *Applied and Environmental Microbiology*. 67:5801-5809.

**Buchan, A., M. Alber, and R. E. Hodson. 2001.** Strain specific differentiation of environmental *Escherichia coli* isolates via denaturing gradient gel electrophoresis (DGGE) analysis of the 16S-23S intergenic spacer region. *FEMS Microbial Ecology*. 35: 313-321.

**Buchan, A., L. Collier, E. Neidle, and M. A. Moran. 2000.** Key aromatic-ring-cleaving enzyme, protocatechuate 3,4-dioxygenase, in the ecologically important marine *Roseobacter* lineage. *Applied and Environmental Microbiology*. 66:4662-4672.