

## DAVID WILLIAM BUCKALEW

### PERSONAL DATA

Address: Department of Biological and  
Environmental Sciences  
Longwood University  
Farmville, VA 23909

Home Address: 2763 Lockett Road  
Rice, VA 23966

E-mail: [buckalewdw@longwood.edu](mailto:buckalewdw@longwood.edu)

Telephone: (434) 395-2586 (Office)  
(434) 391-3497 (Home)

Marital Status: Married; no children

Hobbies: Hiking, traditional archery, bike touring,  
amateur astronomy

### EDUCATION AND EXPERIENCE

December, 1977 B.S., Frostburg State University, Frostburg, MD  
Biology and Psychology majors

May, 1982 M.S., Frostburg State University, Frostburg, MD  
Biology  
Thesis: *Invertebrates as vectors of endomycorrhizae and  
Rhizobium upon surface mine soils.*

May, 1989 Ph.D., Colorado State University, Fort Collins, CO  
Botany (Mycology)  
Dissertation: *The effects of VA mycorrhizal colonization on  
concentrations of phosphorus and nitrogen in  
grasses.*

## ACADEMIC EXPERIENCE

- Summers 10,11/Fall 2011     **Medical microbiology intern for clinical lab licensure;** University of Virginia Hospital and Virginia Commonwealth University Clinical Lab Science program
- Aug 06 - present     **Associate Professor; Microbiology, Immunology, Medical Microbiology, and General Biology (majors and non-majors),** Dept. of Biological and Environmental Sciences (BES), Longwood University (LWU)
- Nov 99 – Present     **Microbiologist and Board Member;** Clean Virginia Waterways, Farmville, VA (office on LWU campus); assess surface and well waters for coliform and fecal coliform bacteria; obtain outside funding for same; responsible for over \$75 K in funding for bacterial assays over 10 yrs
- Aug 99 – Present     **Various LWU duties:**  
Member; **Longwood BSRN Planning Committee** (07 - present)  
Member; **Longwood BSRN Admissions Committee** (08-present)  
Director; **BES Pre-Health Careers Programs** (05 - present)  
Member; **BES Faculty and Chair Search Committees** (every year 2000-2010) aided in hiring 11 of our current BES and Chemistry faculty  
Member; **Longwood BSRN Faculty Search Committee** (08 - 10)  
Board member alternate; **Longwood Center for the Visual Arts** (00-present)  
Chair; **BES Curriculum Committee** (08 –09)  
Faculty representative; **Longwood Judicial Board** (04-09)  
Member; **Ad-hoc University Promotion and Tenure Committee** (06 -08)  
Member; **New Science Facility Planning/Design Committee** (00-05)  
Member; **Academic Affairs Council** (00-03)  
Member; **College of Arts and Sciences Chairs Committee** (00-03)
- Coordinator of course scheduling for:**  
Biology, Chemistry, Physics, Geo/Earth Sciences (99-04)  
Biology and Environmental Sciences (04-05)  
Member; **LWU Agenda Earth Committee** (99-03)  
Member; **SACS Review Committee** - Admissions subgroup (04-05)  
Chair Evaluator; **Science Faculty Probationary, Tenure, and Annual reviews (00-03)**  
Evaluator; **VA State Classified Employees** (2 (as Chair))  
Member; **Longwood University Budget & Planning Committee**(01-03)
- May 00 – July 03     **Chairman;** Dept. of Natural Sciences Department (included Biology, Chemistry, Geography/Earth Science, and Physics/Pre-Engineering departments – 23 FT, 4 PT faculty, 3 staff), LWU
- Aug 99 – May 06     **Assistant Professor;** Dept. of Natural Sciences, LWU
- Aug 93 – May 99     Associate Professor; **General Biology, Botany, Microbiology, Diagnostic Microbiology, Environmental Science, Techniques of Research, and Senior Seminar,** Dept. of Biology, Xavier University of LA (XU)
- Aug 97 – May 99     Coordinator; **Environmental Studies Program Curriculum and Advising for Science majors,** XU
- Aug 95 – May 99     Coordinator of Pre-Med Advising, Dept. of Biology, XU



**PROFESSIONAL EXPERIENCE (Cont'd)**

Nov 2008                    **General meeting coordinator;** Annual Research Meetings VA-ASM, James Madison University, Harrisonburg, VA

July 07 - June 08           **Branch President-elect;** VA-ASM

July 05 – July 07           **Branch Councilor;** VA-ASM

Nov 04 - present           **QA/QC/SOP lab** plan approval and certification from VA Dept. of Env. Quality for defined substrates analysis of *Escherichia coli* for state water quality reporting

Sept 02 - present           **Reviewer;** Journal of Environmental Management, Elsevier Scientific Publishers, Cambridge, CB4 1YG, United Kingdom

Sept 06 – present           **Reviewer;** Journal of Water Research, Elsevier Scientific Publishers

May 08 – present           **Reviewer;** Journal of Applied Microbiology, Blackwell Publishers

June 06 - 09                **Secretary;** Virginia Water Monitoring Council

May 04 - 09                **Steering Committee Member;** Virginia Water Monitoring Council

June 04                      **Participant;** NSF Chautauqua Program, "Updating Undergraduate Immunology" MIT Whitehead Institute, Cambridge, MA

Dec's 02, 03, 04           **Panel Reviewer;** Research Experience for Undergraduates (NSF-REU) Institutional Grants, National Science Foundation, Arlington, VA

Mar 02                       **Reviewer;** The Cooperative Institute for Coastal and Estuarine Environmental Technology (CICEET), University of New Hampshire, Durham, New Hampshire

June 99                      **Convener;** Workshop on Environmental Science and the Undergraduate Curriculum, Faculty Resource Network, New York University

Aug 95 – May 99           **Coordinator and Resource Advisor;** Howard Hughes Biomedical Institute Grants for Middle and High School Math/Science Educators for SE Louisiana

April 96/97/98/99           **Science/Math Workshop Convener;** SE Louisiana Workshops for Secondary Science and Math Teachers; Xavier's Howard Hughes Biomedical Institute Grant Program

Oct 82 - Aug 84           **Laboratory Scientist I;** Photovoltaics Laboratory (Solarex Aerospace), National Security Agency, Ft. Meade, MD

May 80 - Jan 81  
& May 82 - Oct 82           **Resource Management Technician/Specialist;** National Park Service, Everglades National Park, FLA/ Colorado National Monument, CO

## **PUBLICATIONS**

**Buckalew, D.W.**, G.T. Du, and D.S. Smith. 2010. Effect of sampling depth on counts of *Escherichia coli* in freshwater streams. *J. Water Res.* (in preparation)

**Buckalew, D.W.**, L.J. Hartman, G.A. Grimsley, A.E. Martin, and K. M. Register. 2006. A long-term study comparing membrane filtration with Colilert defined substrates In detecting fecal coliforms and *Escherichia coli* In natural waters. *J.Env. Mgmt.* 80: 191-197.

**Contributing author.** Chapter 8 – Bacteria. Pp 81-86. In: Virginia Citizen Water Quality Monitoring Program Methods Manual, Virginia Department of Environmental Quality. July 2003.

**Contributing author.** Volunteer Estuary Monitoring: A Methods Manual, 2<sup>nd</sup> Edition. 2000. US Environmental Protection Agency Office of Wetlands, Oceans, and Watersheds. Washington, DC. 334 pp. <http://www.epa.gov/owow/estuaries/monitor>

Reeves, F.B., **D.W. Buckalew**, and J. Acsai. 1988. Nutrient ratios, mycorrhizal fungi, and succession in semiarid environments. Pp. 50-77. In: Semiarid ecosystem development as a function of resource processing and allocation. Ed. E.F. Redente. Research report by Colorado State University submitted to US Dept. of Energy (DOE/ER/604591).

Reeves, F.B., **D.W. Buckalew**, and J. Acsai. 1987. Mycorrhizal dependency and life history strategies as they relate to plant succession in a semiarid ecosystem. Pp. 9-26. In: Structural and functional changes in early successional stages of a semiarid ecosystem. Eds. E.F. Redente and C.W. Cook. Research report by CSU submitted to U.S. Dept. of Energy (DEAC 02-87EV04018).

Reeves, F.B., **D.W. Buckalew**, and J. Wahler. 1986. The role of symbiotic fungi in semiarid ecosystem development. Pp. 67-69. In: Semiarid ecosystem development as a function of resource processing and allocation. Eds. E.F. Redente, C.W. Cook, J.M. Stark, and C.L. Simmons. Research report by CSU submitted to U.S. Dept. of Energy (DOE/04018-8).

## **PRESENTATIONS WITH STUDENTS**

Lucento, S.F., T.M. Smith, and D.W. Buckalew. 2011. Use of indicator bacteria for assessment of water: change of a paradigm? Poster presentation at Annual Meeting, Virginia Branch – American Society for Microbiology (VA-ASM), Virginia Polytechnic and State University, Blacksburg, VA, Nov 4, 2011.

Smith, T.M., S.F. Lucento, and D.W. Buckalew. 2011. *Salmonella spp.* numbers much greater than indicator bacteria in environmental waters. Poster presentation at Annual Meeting, VA-ASM, Virginia Polytechnic and State University, Blacksburg, VA, Nov 4, 2011.

BIOL 121 Honors students. 2010. 12 most common trees and 12 most common fall wildflowers along High Bridge Trail State Park. Poster presentation to area citizens and park rangers and staff, Longwood University, Nov 15, 2010.

Jakab, Z., B.K. Rich, and D.W. Buckalew. 2009. Effects of a small impaired watershed on bacterial water quality in a storm water pond. Poster presentation at Annual Meeting VA-ASM, Virginia Commonwealth University, Nov 13, 2009.

Betterton, A.A., A.L. Dedor, E.A. Poyner, M.M. Stevens, and D.W. Buckalew. 2009. What it takes to be a pathogen: the 7 components of pathogenicity. Posters and flash card samples displayed at 2009 Honors student colloquium, Longwood University, April 23, 2009

**PRESENTATIONS WITH STUDENTS (Cont'd)**

Beres, K.J. and D.W. Buckalew. 2008. Effects of sample preservation technique on counts of coliform bacteria and *E. coli* from environmental water samples. Poster presentation at Annual Meeting, VA-ASM, James Madison University, Harrisonburg, VA Nov 7, 2008.

Considine, K.N., A.L. Flowers, and D.W. Buckalew. 2007. Bacterial data for the public: creating a web-based map of bacterial assessment sites within an urban watershed. Poster presentation at Annual Meeting, VA-ASM, University of Richmond, Richmond, VA Nov 9, 2007.

A.L. Flowers, K.N. Considine, and D.W. Buckalew. 2007. Bacterial stratification within the stream column II: Surface counts. Poster presentation at Annual meeting VA-ASM, University of Richmond, Richmond, VA Nov 9, 2007.

Simmons, A.K., T.W. Lankford, and D.W. Buckalew. 2006. Effect of sampling depth on counts of *Escherichia coli* in freshwater streams. Poster presentation at Annual Meeting VA-ASM, Virginia Military Institute, Lexington, VA Nov 10, 2006.

Tuono, A.J. and D.W. Buckalew. 2006. Water sample depth and *Escherichia coli* stratification in freshwater streams. Vera Remsburg Research Scholarship paper presentation – 84<sup>th</sup> Annual VA Academy of Sciences Meeting, Virginia Polytechnic and State University, Blacksburg, VA May 25, 2006.

Tuono, A.J. and D.W. Buckalew. 2005. Effect of sampling depth on counts of *Escherichia coli* in freshwater streams: preliminary results. Poster presentation at VA-ASM Annual Meeting, Virginia Wesleyan College, Norfolk, VA Nov 4, 2005.

Buckalew, D.W. 2005. How to plan, prepare, and coordinate a water monitoring program. Invited talk. Dept. of Biological Sciences, University of Great Falls, Great Falls, MT May 10, 2005.

Hasinger, S.M. and D.W. Buckalew. 2004. Feasibility of using Coliscan gels for Isolating and enumerating coliform bacteria In surface water samples. Poster presentation at VA-ASM Annual Meeting, Bridgewater College, Bridgewater, VA. Nov 5, 2004.

Buckalew, D.W. 2004. Bacteriological testing of water: an historical perspective. Invited talk. VA Citizens for Water Quality Summit, Longwood University, Farmville, VA. Feb 7, 2004.

Robertson, B.N., A.E. Martin, and D.W. Buckalew. 2003. Bacterial loading during rain events within the Saylor's Creek tributary of the upper Appomattox River, Virginia. Poster presentation at VA-ASM Annual Meeting, University of Virginia, Charlottesville, VA. Nov 7-8, 2003.

Robertson, B.N. and D.W. Buckalew. 2003. Land use practices and rates of fecal coliform entry during rain events into the Saylor's Creek tributary of the upper Appomattox River, Virginia. Research presentation at Virginia Academy of Sciences Fall Undergraduate Research Meeting, Richmond, VA. Oct 18, 2003.

Buckalew, D.W. 2003. Citizen Water Quality Monitoring: Connections with Academia. Invited talk. VA Citizens for Water Quality Summit, University of Virginia, Charlottesville, VA. July 26, 2003

Buckalew, D.W. 2003. A long-term comparison of assessment methodologies for detecting fecal coliform bacteria in natural waters. 81st Annual Meeting of the Virginia Academy of Science, University of Virginia, Charlottesville, VA, May 29, 2003.

**PRESENTATIONS WITH/ABOUT STUDENTS (Cont'd)**

Buckalew, D.W. and H. Fillmore. 2002. *Enterococcus* and Interstitial Cystitis: an etiologic connection? IRB presentation, Medical College of Virginia/Virginia Commonwealth University, Richmond, VA. Mar 22, 2002.

Jones, K.E., G.A. Grimsley, and D.W. Buckalew. 2001. Climatic influence on fecal coliform/fecal streptococcal (FC/FS) ratios as source indicators of bacterial pollution in the upper Appomattox River watershed. In: Proceedings of the 79<sup>th</sup> Annual Meeting of the Virginia Academy of Sciences, James Madison University, Harrisonburg, VA

Buckalew, D.W. 2001. Introductory address and presentation. Concentrated Animal Feedlot Operations (CAFO's) and the Environment Symposium, Clean Virginia Waterways and Dept. of Natural Sciences of Longwood College, Farmville, VA. June 16, 2001.

Register, K.M. and D.W. Buckalew. 2001. Starting a water quality monitoring program: A case study in partnerships. Seventh National Water Research Symposium, Richmond, VA. May 23, 2001.

Register, K.M. and D.W. Buckalew. 2000. How to start a volunteer water monitoring program. Virginia Water Monitoring Council Workshops, Virginia Water Research Symposium 2000, Roanoke, VA. Nov 7, 2000.

Buckalew, D.W. and M. M. Hafez. 2000. The results of a preliminary monitoring program for fecal coliform bacteria within the upper Appomattox River watershed. In: Proceedings of the Virginia Water Research Symposium 2000, Virginia Water Resources Center, Virginia Polytechnic University, Blacksburg, VA

Roberts, C.N. and D.W. Buckalew. 1999. Vesicular-arbuscular mycorrhizae as tools for wetland reclamation and survival. Proceedings of the 73<sup>rd</sup> Meeting of the Louisiana Academy of Sciences, Northeast Louisiana University, Monroe, LA. Feb 5, 1999.

Buckalew, D.W. 1999. Environmental Science in the Undergraduate Curriculum. Workshop address, Faculty Resource Network, New York University, New York, NY. June 7, 1999.

Buckalew, D.W. 1998. Using Biomolecular Technology in the General Biology Lab, Faculty Resource Network/National Science Foundation Symposium on "Shaping the Future: Teaching Science to Undergraduates in the 21st Century." Atlanta University Center, Atlanta, GA, October 2-4, 1998.

Alexander, R., T. Pennick, L. Woods, and D. Buckalew. 1998 Incidence and lateral distribution of Vesicular-Arbuscular mycorrhizae in freshwater wetland soils. Annual Meeting of the Louisiana Academy of Sciences, Southeastern Louisiana University, Hammond, LA Feb 4, 1998.

Buckalew, D.W. 1997. Incorporating cellular/molecular techniques in the General Biology laboratory, Undergraduate Enhancement of Cellular/Molecular Biology Workshop, New York University, June 10, 1997.

Buckalew, D.W. 1997. The greening of Xavier University and the proposed XU Environmental Minors Curriculum, Second Nature's Southeast Regional Workshop on Education for Environmental Sustainability, Stone Mt., Georgia, May 30, 1997.

Buckalew, D.W. 1997. The molecular techniques lab applied to undergraduate General Biology courses. NYU Faculty Resource Network Regional Colloquium, Xavier University, Feb 22, 1997.

### **PRESENTATIONS WITH/ABOUT STUDENTS (Cont'd)**

Buckalew, D.W. 1996. Aquatic fungi in the Bayou Trepagnier Swamp Ecosystem. Annual Meeting of the Center for Bioenvironmental Research DOE Study Core, Tulane University, New Orleans, La. July 31, 1996.

Buckalew, D.W., E. Jackson, D. Smith, E. McKinnon, M. Watkins, and A. Robillard. 1993. An assay to determine the phytotoxic effects of jet fuels: Effects on vesicular-arbuscular mycorrhizae. Annual Meeting of the Mycological Society of America, Univ. of Georgia, Athens, Ga., June 20, 1993.

Buckalew, D.W. 1992. New directions in undergraduate science education. 92nd General Meeting of the American Society for Microbiology, New Orleans, La., May 30, 1992.

Buckalew, D.W. 1991. A model for student "pipelines" in science education, Louisiana Systemic Initiative Program for Math and Science, Louisiana State University, Baton Rouge, La., Sept. 4, 1991.

Reeves, F.B. and D.W. Buckalew. 1990. Field demonstration of VAM benefits in semiarid grasses. 8th North American Conference on Mycorrhizae (NACOM), Jackson, Wyoming, Sept. 5-8, 1990.

Buckalew, D.W. 1989. Ratios of elements in plants. Honors Colloquium, Colorado State University, March 8, 1989.

Buckalew, D.W., R.K. Riley, W.A. Yoder, and W.J. Vail. 1982. Invertebrates as vectors of endomycorrhizae and Rhizobium upon surface mine soils. In: Proc. W.Va. Acad. Sci. 54:1

### **GRANTS**

- |                  |   |
|------------------|---|
| Jan 10 – Jan 11  | <b>Consultant;</b> Rainwater Harvesting Project, Center for Watershed Protection/Rain Management Solutions – National Fish and Wildlife Foundation grant. Award \$90K.  |
| Jan 08 – Jan 11  | <b>Co-Director;</b> Appomattox River Water Quality Monitoring Program (ARWQMP) VA Dept. of Environmental Quality (VDEQ) FY's 2009, 2010, and 2011 Citizen Monitoring grant. Awards: \$4.5K (each year)                              |
| Jan 07 – Jan 08  | <b>Co-Director;</b> ARWQMP VDEQ FY 2007 Citizen Monitoring grant. Award: \$5K   |
| Jan 06 – Jan 07  | <b>Co-Director;</b> ARWQMP VDEQ FY 2005 and 2006 Citizen monitoring grant. Award : \$4.5K (both years)  |
| Nov 01 - Dec 03: | <b>Co-Director,</b> ARWQMP VDEQ FY 2002 and 2003 Citizen Monitoring Grant. Award: \$4K (both years)   |
| Oct 99 – Oct 01: | <b>Principal investigator;</b> ARWQMP Project Initiation Grant, Virginia Environmental Endowment Grant No. 99-15. Award: \$25K  |
| Jan 98 - May 00: | <b>Co-investigator;</b> "Retention and Academic Preparedness in the Sciences at Xavier University," NIH Minority Access to Research Careers (MARC) Program. Dept. of HHS/Public Health Service Grant No. GM-98-009/010 Award: \$43K |



### **GRANTS (CONT'D)**

- Jan 96 - Dec 00: **Faculty Mentor;** Xavier/UNCF/NSF Alliance for Minority Participation (AMP) in Math, Science, and Engineering. Award: \$250K
- Nov 96 - May 98: **Faculty Mentor;** "The occurrence of vesicular-arbuscular mycorrhizae in native grasses within a freshwater wetland." Tri-Beta Biological Honor Society National Research Grant. Award: \$1.5K
- May 92 – Aug 95: **Subcontractor;** Tulane/Xavier Alliance Pilot Grant; "A comparative study of coastal erosion control/reversal devices for areas impacted by oil and gas activities." Dept. of Energy Grant No. 0290-0242-1. Award: \$60K.
- Jan 91 - Jan 93: **Principal Investigator;** "An assay to determine the phytotoxicity of jet fuel: effects on vesicular-arbuscular mycorrhizae." Air Force Office of Scientific Research Grant No. F49620-88-0053. Award: \$31K.
- Sept 90 - Sept 92: **Principal Investigator;** "VA mycorrhizal fungi as tools for revegetation efforts on both moderately and severely damaged DoD use areas." Dept. of Defense Bioenvironmental Research Grant No. DoD/1-231-845. Award: \$30K

### **PROFESSIONAL SOCIETIES**

American Institute for the Biological Sciences  
American Society for Microbiology  
American Society for Microbiology - VA Branch  
Virginia Association of Biological Educators

### **HONOR SOCIETIES AND AWARDS**

Beta Beta Beta, Biological Honor Society (current)  
Soil and Water Conservation Society – Virginia Chapter Merit Award (2011)  
Outstanding First Year Student Advocate – Longwood Office of First Year Experience (2010)  
Alpha Lambda Delta Freshman Honor Society – Longwood Favorite Professor Award (2009)  
Geist Chapter of Mortar Board National Honor Society (Honorary Spirit Leader 2001/02/09)  
Longwood University Faculty/Staff Citizen Leader Award (2008)  
CHI Commendation - Cormier Honors College, Longwood University (2002)  
Piedmont Soil and Water Conservation Environmental Educator Award (2000)  
Xavier Center for the Advancement of Teaching WEBCORE Grant (1997)  
Xavier Center for the Advancement of Teaching Curriculum Revision Grant (1997)  
Xavier Bush Grant Award for publication of Botany Laboratory Manual (1992)  
Mined Land Reclamation Scholarship (CSU 1987/88)

