

**VIRGINIA ACADEMY OF SCIENCE  
1999 BEST STUDENT PAPER AWARDS**

**Agriculture, Forestry and Aquaculture**

Scott Sink, Environmental Implications of Phosphorous Intake by Dairy Cows in Virginia. Department of Dairy Science, VPI & SU, Blacksburg, VA

Honorable Mention: Bronson Bullock, Modeling Green Weight of Loblolly Pine (*Pinus taeda L.*). Department of Forestry, VPI & SU, Blacksburg, VA

**Astronomy, Mathematics and Physics**

Tim Nagle (Faculty Member: Tim Gfroerer), Construction and Characterization of a Laser Diode Assembly for Semiconductor Spectroscopy. Department of Physics, James Madison University, Harrisonburg, VA.

Brian Woodley (Faculty Member: Gerald R. Taylor), Preliminary Characterization of ITO Thin Films. Department of Physics, James Madison University, Harrisonburg, VA.

**Biology**

A.M. Lo Galbo, Osteological Comparison of the Percoid Families Lethrinidae and Sparidae. Department of Biology, Old Dominion University, Norfolk, VA

Honorable Mention: D.K. Mills, Paper Title: Molecular Monitoring of Microbial Populations During Bioremediation of Contaminated Soils. Department of Biology, George Mason University, Fairfax, VA

Honorable Mention: G.G. Borneo, Effect of Combining Molecular Data Sets on Phylogeny in Chloridoideae (Poaceae). Department of Biology, VPI & SU, Blacksburg, VA

**Biomedical and General Engineering**

John K. Alexander, Design, Fabrication and Testing of an Impedometric Cell Tracking Electrode. Department of Biomedical Engineering, Virginia Commonwealth University, Richmond, VA

Honorable Mention: Venkatesh Mani, Spectral Power at Onset of Ventricular Tachyarrhythmia. Department of Biomedical Engineering, Virginia Commonwealth University, Richmond, VA

Honorable mention: William B. McGarry, Evaluation of Knee Kinematics with a Magnetic Tracking Device. Department of Biomedical Engineering, Virginia Commonwealth University, Richmond, VA

**Botany**

Jennifer Wolny, Paper Title: Phytoplankton populations in Hoffer Lake, Portsmouth, VA: A Year-long study. Department of Biological Sciences, Old Dominion University, Norfolk, VA.

Vanessa D. Jones, Effect of uniconazole on free sterol and steryl ester pools in wild-type and HMG-2 transformed tobacco. Department of Plant Pathology, Physiology and Weed Science, VPI & SU, Blacksburg, VA.

Honorable mention: Donna M. Tuckey, Comparison of the free sterol and steryl ester profiles of two species of green algae *Clorella pyrenoidosa* and *C. Vulgaris*. Department of Plant Pathology, Physiology, and Weed Science, VPI & SU, Blacksburg, VA.

**Environmental Science**

Matthew Ettinger, Fish lesion with free-living Pathogenic Amoebae and Bacteria at the James River Fall Line. Department of Biology, Virginia Commonwealth University, Richmond, VA

Honorable Mention: Amy Irby, Microbial Diversity in Solar Salterns. Department of Biological Science, George Mason University, Fairfax, VA.

**Geology**

Susan Vidal, Historical Shoreline Changes of Parramore Island, VA, 1871-1998. Department of Geology and Earth Sciences, George Mason University, Fairfax, VA.

Honorable mention: K.C. ST. Claire. A sedimentary and geochemical investigation of factors causing color in a variety of Georgia soils and soil-paintings: A model for teaching mineralogy that bridges science and art in a truly liberal arts perspective. Department of Geology, Radford University, Radford VA.

Honorable mention: Kathleen Overman and Jonathan Navarro, Vegetation classification and soil moisture analysis via remote sensing techniques, Fisherman Island Virginia. Department of Ocean, Earth, and Atmospheric Science, Old Dominion University, Norfolk, VA.

**Material Science**

Rama Balasubramanian, Study of short-term atmospheric corrosion of carbon steel. Department of Physics, Old Dominion University, Norfolk, VA.

Honorable mention: Rachel Giunta, Accelerated Aging of Polyimide/Titanium Adhesive System.

Department of Material Science and Engineering, VPI & SU, Blacksburg, VA

Honorable mention: Jeff. Mirick, Vibrational analysis of calcium clusters. Department of Computational Science, George Mason University, Fairfax Va .

**Medical Sciences**

Candace Floyd, Alterations in Inositol Phosphates after Traumatic Injury of Astrocytes. Department of Pharmacology and Toxicology, Virginia Commonwealth University, Richmond, VA

Honorable mention: John Weber, Calcium- Mediated Signal Transduction is Altered after Traumatic Injury of Cortical Neurons. Department of Pharmacology and Toxicology, Virginia Commonwealth University, Richmond, VA

Honorable mention: Cynthia Schieck, Phenylalklamines: Not just 5-HT<sub>2</sub> Agonists. Department of Medicinal Chemistry, Virginia Commonwealth University, Richmond, VA

**Microbiology and Molecular Biology**

D.J. Sheay, Molecular Characterization of Revertants of r-g:Y2902 Allele. Department of Biology, Virginia Commonwealth University, Richmond, VA

**Natural History and Biodiversity**

Terre Zorman, Comparison of larval myomere counts among *Nocomis* species in Virginia. University of Richmond, Richmond, VA.

Honorable mention: Thomas P. Wilson, Habitat usage and spatial ecology of the spotted turtle (*Clemmys guttata*) in Fairfax Co., Virginia. Department of Biology, George Mason University, Fairfax, VA.

**Psychology**

Jennifer Scott, The use of strategies and their effect on working memory task performance. Department of Psychology, Old Dominion University, Norfolk, VA.

Honorable mention: Janine DeBellis, Gender differences and similarities in parent-child play. School of Psychology, James Madison University, Harrisonburg, VA.

Honorable mention: Joy Cicman, Looking for Mr./Mrs. Right": Determinants of appearance references in construction of singles ads. Department of Psychology, Old Dominion University, Norfolk, VA.

**Statistics**

B. Alden Starnes, Asymptotic Results for MRR1 and MRR2. Department of Statistics, VPI & SU, Blacksburg, VA.

Honorable Mention: Brian Reck, Analysis of the Breastfeeding Habits of a Sample of Mexican Mothers. Department of Math and Statistics, Old Dominion University, Norfolk, VA.