Jerilyn Mitchell Swann, Ph.D.

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Objective

Exploration of biology and liberal arts through instruction, undergraduate research, and service

Education

Ph.D. Zoology, University of Tennessee, Knoxville, 1998
Dissertation: Evaluation of two *in vitro* ciliated epithelial systems, dog trachea and frog palate, for potential as screens for acute inhalation toxicity

M.S. Zoology, University of Tennessee, Knoxville, 1994
Thesis: The functional and ultrastructural effects of the of the organophosphorous insecticides Dursban™ and Lorsban™ on the ciliated epithelium of the frog palate *in vitro*

B.S. Zoology, University of Tennessee, Knoxville, 1992

Positions Held

Professor of Biology, Maryville College, 2016 to present
Chair, Division of Natural Sciences, Maryville College, June 2011 to present
Associate Professor of Biology, Maryville College, 2004-2016
Assistant Professor of Biology, Maryville College, 1999-2004
Instructor, Itawamba Community College, Fulton, MS, 1997-1999

Teaching Experience

Maryville College (1999-present)
Biology 115 – Principles of Cellular Biology with Lab
Biology 299 – Biology Research Methods
Biology 301 – Cellular and Tissue Biology with Lab
Biology 351 & 352 – Senior Study
Biology 413 – Microbial Ecology – new course with Lab
Science 150 – Introduction to Natural Sciences with Lab
Science 350 – Science and Medicine; Hot Topics in Cell Biology
FRS 120 – Perspectives on the Individual
FRS 130 – Perspectives on the Environment – Solid Waste
FRS 140 – Perspectives on the American Community – The Working Poor; The Bill of Rights
FYS 100 – Introduction to the College
FYS 110 – First-Year Seminar: Sex, Drugs, and Survival in the Natural Sciences
EXP 200 (January 2015) – Science and Outdoor Fitness in Costa Rica
Itawamba Community College (1997-1999)
General Biology with Lab
Major's Biology Laboratory
General Zoology with Lab
Environmental Science – new course with Lab

Research Publications (students in bold)

- Brigati J, Swann J. (2015) Facilitating improvements in laboratory report writing skills with less grading; a laboratory report peer review process. *Journal of Microbiology and Biology Education* **16**(1):61-68.
- Sterrett JD, Marks M, Dunlap J, Swann J, **Schrock K**. (2015) The effects of scanning electron microscopy desiccation preparation on demineralized dentin surfaces. *International Journal of Periodontics and Restorative Dentistry* **35**(3):403-408.
- Abstract: **Heard RE**, **Revilla SF**, **Carter TR**, Swann JM (2011) Evaluation of Different Nutrient Medias on Population Growth of *Tetrahymena pyriformis*. *Molecular Biology of the Cell* **22** (suppl):2214.
- Abstract: **Carter TR**, **Heard RE**, **Revilla SF**, Swann JM (2011) Effect of Centrifugation on Viability of the Ciliated Protist *Tetrahymena pyriformis*. *Molecular Biology of the Cell* **22** (suppl):2234.
- Abstract: **Revilla SF**, **Carter TR**, **Heard RE**, Swann JM (2011) Improvement of Absorbance Measurements of *Tetrahymena pyriformis* Using the Vital Stain Acridine Orange/Ethidium Bromide. *Molecular Biology of the Cell* **22** (suppl):2242.
- Abstract: **Ogle AE**, Swann JM (2010) Ethidium Bromide/Acridine Orange Staining Method for Counting Cell Populations of *Tetrahymena pyriformis*. *Molecular Biology of the Cell* **21**(4299):3141.
- Swann JM, Schultz TW, Kennedy JR (1999) Evaluation of two *in vitro* ciliated epithelial systems, dog trachea and frog palate, for potential as screens for sensory irritation. *In Vitro and Molecular Toxicology* **12**(1):17-32.
- Swann JM, Schultz TW, Kennedy JR (1996) The effects of the organophosphorous insecticides Dursban^{TM} and Lorsban^{TM} on the ciliated epithelium of the frog palate *in vitro*. *Archives of Environmental Contamination and Toxicology* **30**:188-194.
- Swann JM, Carver TA, Schultz TW (1995) Mechanism-based structure-toxicity relationships for *Chlorella vulgaris*. *Toxicology Modeling* **1(2)**:111-121.
- Kucera SP, Swann JM, Kennedy JR, Schultz TW (1995) The effects of benomyl and its breakdown products carbendazim and butyl isocyanate on the structure and function of tracheal ciliated cells. *Journal of Environmental Science and Health* **B30(6)**:779-799.

Recent (other) Professional Development

- Abstract: Sterrett JD, Marks M, Dunlap J, Swann J, **Dunn M**. (2015) SEM preparation of demineralized dentin surfaces: air drying vs. liquid CO_2 desiccation. Our work was presented by John Sterrett at the Annual Meeting of the American Academy of Periodontology in Orlando, FL, in November 2015
- Attended Triangle Cytoskeleton Meeting in Saxapahaw, NC, Sept. 21, 2015 (regional meeting of the American Society for Cell Biology)
- Assisting in the development (with Dr. Dave Unger) of a Biology 403 (Vertebrate Field Zoology) course with international laboratory component: Turtle Conservation Research in Costa Rica, for spring, 2017, delivery

- Development and delivery of new course (with Bruce Guillaume), "Science and Outdoor Fitness in Costa Rica", scouted in May, 2013, and first class completed in January, 2015
- Three poster presentations with 3 students, Stephen Revilla, Rebecca Heard, and Tyler Carter, at 51st Annual Meeting of the American Society for Cell Biology, Denver, CO, December 2011. Poster titles: Evaluation of Different Nutrient Medias on Population Growth of *Tetrahymena pyriformis*; Effect of Centrifugation on Viability of the Ciliated Protist *Tetrahymena pyriformis;* and Improvement of Absorbance Measurements of *Tetrahymena pyriformis* Using the Vital Stain Acridine Orange/Ethidium Bromide
- Project coordinator for Undergraduate Science Education and Research Institute at Maryville College, supervising 3 students in the cell biology lab, Summer, 2011
- Poster presenter with student Abby Ogle at 50th Annual Meeting of the American Society for Cell Biology, Philadelphia, PA, December 2010. Poster title: Ethidium Bromide/Acridine Orange Staining Method for Counting Cell Populations of *Tetrahymena pyriformis* (her senior study research)
- Reviewer for two chapters of Freeman's *Biological Sciences*, Benjamin Cummings Publishing Company, Summer 2008
- Final Reviewer for one chapter of Freeman's *Biological Sciences*, Benjamin Cummings Publishing Company, June 2009
- Attended 48th Annual Meeting of the American Society for Cell Biology, San Francisco, CA, December 2008.

Significant Academic and Administrative Service at Maryville College

- Chair (appointed), Natural Sciences Division, 2011-present
- Chair, Core Curriculum Subcommittee on Scientific Literacy, 2014
- Program Director for Department of Education/Funds for the Improvement of Post-Secondary Education congressionally appropriated $300,000 congressional appropriation to pilot the Undergraduate Science Education and Research Institute at Maryville College, 2011-2012
- Subtopic Leader for FRS 130 Solid Waste, January 2010, 2011
- Director/Steering Committee Chair, National Coalition Building Institute (NCBI) Maryville College Campus Affiliate, 2008-2012; Team Member 2008-present
- Convener (appointed), First-Year Experience Coordinating Group, 2008-2009; Member, 2005-2009
- Faculty Personnel Standards Committee (elected) – 2006-2008
- Advising Fact-Finding Group – 2008
- Curriculum Sub-Committee for Diversity Task Force, 2008
- Developer and Coordinator (appointed), Presidential Scholars Enrichment Program, 2004-2008
- Health Insurance Advisory Group – 2006-present
- Faculty Liaison Committee (elected) – 2003-2005

Recent Community Service

- "Cells!" presentation for 4th grade classes at Alcoa Elementary School, Fall 2013
- Service-Learning component of Introductory Cellular Biology course placed students in local school systems engaging younger students in hands-on science activities, 2009-2011
- Co-presenter with Dr. Angelia Gibson, "The War on Cancer: 36 years and the Battle Rages On", for the Maryville College Science Literacy Seminar Series, April 30, 2008

Recent Awards and Honors

- Received Curricular Innovation Funds from the MC Academic Dean to develop and scout an international science experiential course, May 2013 (first class delivered in January 2015, Costa Rica), as part of a Natural Sciences strategy to incorporate international experiences into majors courses
- Project Supervisor of 3 students in MC Undergraduate Science and Education Research Institute, Summer 2011, summer salary
- Faculty Development Group Grant for National Coalition Building Institute Campus Conference, November 2009, registration and travel costs

Society Memberships

American Society for Cell Biology
Phi Beta Kappa

Selected Recent Senior Study - Students and Thesis Titles

- Shelby Lanz, 2016, Fluorescence microscopy of the actin cytoskeleton of *Tetrahymena pyriformis*: a study of phagocytosis
- Sarah Hagans, 2016, Population counting of *Tetrahymena pyriformis* using the SpectraMax M2 microplate reader
- Montana Dunn, 2015, The effects of scanning electron microscopy preparation techniques on demineralization of teeth
- Dalton Stewart, 2014, Development of loss-of-function technology to study fin regeneration in *Danio rerio*
- Stephen Revilla, 2014, Investigation of the collective mechanical properties of keratinocytes *in vitro*
- Tyler Carter, 2013, Toxicological effects of nonpolar narcotics on cultures of *Tetrahymena pyriformis*
- Kathy Schrock, 2013, The effects of scanning electron microscopy desiccation techniques on tufted collagen root surfaces
- Megan Lock, 2012, The effectiveness of several capturing methods on Orders Aranea, Opiliones, Scorpiones, Uropygi, Amblypygi, and Pseudoscorpiones in Cusuco National Park, Honduras
- Rebecca Heard, 2011, An evaluation of media performance and the effect of centrifugation on viability of *Tetrahymena pyriformis*
- Abby Ogle, 2010, Ethidium bromide/acridine orange staining method for counting cell populations of *Tetrahymena pyriformis*
- Jennifer Oden, 2009, Effects of bis-phenol A (BPA) on cell cultures of *Tetrahymena pyriformis*

- Daniell, Bradley, 2008, The feeding habits and associated behaviors of *Danio rerio* in the light and dark cycle
- Kara Whitlock, 2008, Fluorescent technology in medulloblastoma research