

**Wade E. Bell, Ph.D.
Professor of Biology
Virginia Military Institute**

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Education: B.S., Entomology and Nematology, University of Florida; 1981
M.Ag., Entomology and Nematology, University of Florida; 1984
Ph.D., Cell and Molecular Biology, University of Vermont; 1999

Affiliations:
American Society for Microbiology
International Society of Protistologists
American Society for Cell Biology
National Association of Advisors for the Health Professions
Virginia Academy of Science
Veterans of Foreign Wars

Leadership Positions:
ASM Council Policy Committee (Board of Directors) 2013-2017
Chair, ASM Student Membership Committee 2009 - 2016
ASM Councilor representing Virginia Branch 2003-2006, 2008-2013
ASM Virginia Branch President 2007
NAAHP Board of Directors 2009 - 2011
NAAHP Membership Committee 2008-2011
Chair, NAAHP Technology Advisory Committee 2010 - 2012
ISOP Nominating Committee 2008-2009
ISOP North American Section Steering Committee 2010 – present
Vice-Chair, VMI Department of Biology 2009 – present
Director of Research, VMI Research Laboratories 2012 – present
Deputy Director and Secretary, VMI Research Laboratories 1999 - 2012

Course Profile:
Immunology (BI-411) – 2015 to present
Virology (BI-352) – 2017 to present
Cell Biology (BI 402) – 1998 to present
Microbiology (BI 313) – 2000 to present
Invertebrate Zoology (BI 321) – 2001 to 2008
General Biology (BI 101, BI 102) – 1998 to present
Biological Agents in Warfare and Terrorism (BI 240) – 2006 to 2015
Epidemics and Societies (BI 245) – 2011- to 2015

Committee Assignments:

Health Professions Advisor/Graduate Programs – 1998 to present
Tenure and Promotions Committee – 2006 to 2009 and 2011, 2016
Washington and Lee University IACUC – 2009 to 2017

Grants (funded):

NSF Major Research Instrumentation Grant: 2011 Acquisition of a Laser Scanning Confocal Microscope for Enhancing Undergraduate Research and Training across the Sciences at Washington & Lee University and Virginia Military Institute. Multiple contributors. \$365,000.

Commonwealth Health Research Board: 2008 - 2010 Estrogen's Role in Protecting the Cardiovascular System from Damage and Degenerative Diseases. Co-P.I. \$200,000.

Jeffress Trust Research Grant: 2001- 2003 The Role of Calcium in *Paramecium* Chemoresponse: Elucidation of Mechanisms for Calcium Influx. P.I. \$44,000.

VMI Grant In Aid: 1999 – 2012 Continued in-house support for research with undergraduates. P.I. \$48,000.

Publications:

Bell WE, Van Houten JL (2017) Common Chemical Senses: Protozoa, Neuroscience and Biobehavioral Psychology. Neuroscience and Biobehavioral Psychology. Elsevier Science Direct.

Sykes B, Van Steyn P, Vignali J, Winalski J, Lozier J, **Bell WE**, Turner JE (2016) The Relationship between Estrogen and Nitric Oxide in the Prevention of Cardiac and Vascular Anomalies in the Developing Zebrafish (*Danio rerio*). Brain Sciences. In Press.

Murcia V, Johnson L, Baldasare M, Pouliot B, McKelvey J, Barbery B, Lozier J, **Bell WE**, Turner JE (2016) Effects of Estrogen, Nitric Oxide, and Dopamine on Behavioral Locomotor Activities in the Embryonic Zebrafish: A Pharmacological Study. Toxics. In Press

Bell WE, Hallworth R, Wyatt T, Sisson J (2015) Use of a Novel Cell Adhesion Method and Digital Measurement to Show Stimulus-Dependent Variation in Somatic and Oral Ciliary Beat Frequency in *Paramecium*. Journal of Eukaryotic Microbiology. Vol. 62: 144-148.

Bell WE. (2014) Dantrolene attenuates calcium release from mitochondria during potassium induced depolarization in *Paramecium*. (Abstract) Molecular Biology of the Cell. 25: 3987 (1350)

Allgood OE, Hamad A, Fox J, DeFrank A, Gilley R, Dawson F, Sykes B, Underwood TJ, Naylor RC, Briggs AA, Lassiter CS, **Bell WE**, Turner JE. (2013) Estrogen prevents cardiac and vascular failure in the 'listless' Zebrafish (*Danio rerio*) developmental model. *General and Comparative Endocrinology*. Vol. 189:33-42.

Houser A, McNair C, Piccinini R, Luxhoj A, **Bell WE**, Turner JE. (2011) Effects of estrogen on the neuromuscular system in the embryonic Zebrafish (*Danio rerio*). *Brain Research*. Vol. 1381:106-116.

Bell WE, Ewen R (2010) The Effect of a Thallium-Sensitive Dye on Ciliary Regulation in *Paramecium tetraurelia*. (Abstract) *Molecular Biology of the Cell*. 21: 4299 (1216).

Van Houten JL, **Bell WE** (2009) Chemical Senses: Protozoa. The Encyclopedia of Neuroscience. Vol. 2, pp: 813-818 Oxford: Academic Press

Bell WE, Preston RR, Yano J, Van Houten JL. (2007) Genetic dissection of attractant-induced conductances in *Paramecium*. *Journal of Experimental Biology*. 210:357-365

Bell WE, Kamura E, Hallworth R (2007) Mitochondrial Heterogeneity in *Paramecium*. (Abstract) *Molecular Biology of the Cell*. 22: #19 3555 (1292)

Bell WE, Karstens WH, Sun Y, Van Houten JL. (1998) Biotin Chemoresponse in *Paramecium*. *Journal of Comparative Physiology A*. 183: 361-366

Fraga D, Yano J, Reed M, Chuang R, **Bell W**, Van Houten J, Hinrichsen R (1998) Introducing antisense oligonucleotides into *Paramecium* via electroporation. *Journal of Eukaryotic Microbiology*. 45: 582-588

Bender BS, Cottey R, **Bell WE**, Taylor S. (1996) Body temperature and nesting behavior following influenza challenge in mice: effects of age. *Mechanisms of Aging and Development*. 86(1):1-9

Sastry KJ, Bender BS, **Bell WE**, Small PA, Arlinghaus RB. (1994) Effects of influenza virus-specific cytotoxic T-lymphocyte responses induced by a synthetic nucleoprotein peptide on the survival of mice challenged with a lethal dose of virus. *Vaccine*. 12(14): 1281-1287

Bender BS, **Bell WE**, Taylor S, Small PA. (1994) Class I major histocompatibility complex-restricted cytotoxic T-lymphocytes are not necessary for heterotypic immunity to influenza. *Journal of Infectious Diseases*. 170(5): 1195-2000

Bender BS, **Bell WE**, Taylor S, Scarpace PJ. (1993) Decreased sensitivity to cAMP in the in vitro generation of memory splenic cytotoxic T-lymphocytes from aged mice: role of phosphodiesterase. *Journal of Pharmacology and Experimental Therapeutics*. 264(3): 1381-1386

Platform Presentations:

Bell WE, Thompson E, Emery O (2016) Mitochondrial Contributions to Behavioral and Developmental Phenotypes in *Paramecium*. Ciliate Molecular Biology Meeting in conjunction with the Genetics Society of America Meeting.

Bell WE, McNealy T (2015) My Favorite Microbe. ASM Learning Lab, American Society for Microbiology General Meeting.

Bell WE, McNealy T (2014) My Favorite Microbe. ASM Learning Lab, American Society for Microbiology General Meeting.

Bell WE, Giacalone HA, Sayer CV (2012) Ciliates as Reservoirs for Human Pathogens; Deadly Cargo or Lunch? Meeting of the North American Section of the International Society of Protistologists

Bell WE (2010) Regulation of Ciliary Beat Frequency in *Paramecium*: Zonal Variation. Meeting of the North American Section of the International Society of Protistologists

Brown HJ, Gleaton AV, **Bell WE** (2005) Mitochondrial Calcium Contributes to Swimming Behavior in *Paramecium tetraurelia*. East Coast Conference on Protozoology.

Poster Presentations (most recent):

Bell WE, Sayer CV (2013) *Paramecium* Consumes and Digests *Francisella novicida* with No Apparent Mortality. ASM Biodefense and Emerging Diseases Research Meeting.

Bell WE, John C, Lilly E (2011) Disruption of Autogamy in *Paramecium* Using Inhibitors of Apoptosis and Autophagy. American Society for Microbiology 111th Annual Meeting.

Ewen R, **Bell WE** (2010) Imaging Potassium Flux in *Paramecium tetraurelia* Under Hyperpolarizing Conditions. American Society for Microbiology/Virginia Branch Meeting.

Bell WE, Strand ME, Alerding AB (2010) Plant Root Exudates as Chemoattractants for *Paramecium*. Association of Chemoreception Sciences 32nd Annual Meeting.

Bell WE, Alerding AB, Strand ME (2009) Plant Root Exudates as Chemoattractants for *Paramecium*. American Society for Microbiology 109th Annual Meeting

Bell WE, Giacalone HA (2008) *Francisella* Consumed by *Paramecium* Do Not Escape the Food Vacuole or Survive the Digestive Process. American Society for Microbiology 108th Annual Meeting.

Giacolone HA, **Bell WE** (2007) Degradation of *Francisella novicida* After *Paramecium* Ingestion. American Society for Microbiology/Virginia Branch Meeting.

Bell WE, Kamura E, Hallworth R (2007) Membrane-associated Mitochondria Contribute to Depolarization-mediated Swimming Behavior in *Paramecium*. Association of Chemoreception Sciences 29th Annual Meeting.

Bell WE, Hallworth R, Wyatt TA, Sisson JH. (2006) Use of Ciliary Beat Frequency for Measuring Chemoresponse in *Paramecium*. Association of Chemoreception Sciences 28th Annual Meeting.

Brown HJ, Gleaton AV, Weeraratne SD, **Bell WE** (2005) *Paramecium* Ryanodine Receptors Localize to Mitochondria and Contribute to Depolarization-Mediated Swimming Behavior. Association of Chemoreception Sciences 27th Annual Meeting.

Green MH, Brown HJ, **Bell WE** (2004) The Ryanodine Receptor Antagonist Dantrolene Alters Swimming Behavior and Causes Mortality in *Paramecium tetraurelia*. Association of Chemoreception Sciences 26th Annual Meeting.

Osborne MK, Maxey JA, **Bell WE** (2004) Caspase Inhibitors Block Entry into Autogamy in *Paramecium tetraurelia*. American Society for Microbiology 104th General Meeting

Bice HL, **Bell WE** (2003) Localization of Glutathione S-Transferase in *Paramecium tetraurelia*. American Society for Microbiology/ Virginia Branch Meeting

Brown HJ, Green MH, **Bell WE** (2003) The Ryanodine Receptor Antagonist Dantrolene Alters Swimming Behavior and Causes Mortality in *Paramecium tetraurelia*. American Society for Microbiology/ Virginia Branch Meeting

Osborne MK, Maxey JA, **Bell WE** (2003) Caspase Inhibitors Prevent Autogamy-Induced Macronuclear Degeneration in *Paramecium tetraurelia*. American Society for Microbiology/ Virginia Branch Meeting

Bell WE, Green MH (2002) Live Cell Imaging of Mg²⁺ Influx During the Biotin Off-Response in *Paramecium*. Chemical Senses. 27

Green MH, **Bell WE** (2001) Mortality of *Paramecium* during Epi-fluorescent Microscopy: Effects of Different Excitation Wavelengths and Membrane-permeable Dyes. American Society for Microbiology, Virginia Branch Meeting.

Maxey JA, **Bell WE** (2001) Induction of Autogamy in *Paramecium*: Apoptosis-like Nuclear Degeneration in a Unicellular Organism. Mid Atlantic Regional Conference on Undergraduate Scholarship.

Winters AL, Heatherington S, **Bell WE** (2000) Enhancement of *Paramecium* Chemoresponse with Multiple Attractants and Alterations of Ion Concentration and Composition. American Society for Microbiology, Virginia Branch Meeting.

Bell WE, Preston RR, Yano J, Fiekers JF, Van Houten JL (1999) Genetic dissection of biotin and acetate induced membrane currents in *Paramecium* chemoresponse. *Chemical Senses*. 24

Van Houten JL, **Bell WE**, Yano J. (1997) Transformation with plasmids that express anti-sense-calmodulin RNA selectively inhibit *Paramecium* chemoresponse pathways. *Society for Neuroscience Abstracts*

Bell WE, Van Houten JL. (1997) Pharmacological characterization of biotin-mediated chemokinesis in *Paramecium*. *Chemical Senses*. 22

Yano J, **Bell WE**, Van Houten JL. (1997) Role for calmodulin and the plasma membrane calcium pump in glutamate chemoresponse. *Chemical Senses*. 22