

July 30, 2015

CURRICULUM VITAE  
Peter D. Brodfuehrer, Ph.D.

Position

Professor of Biology  
Neuroscience minor    Head and Adviser for Biology

Work Address

Department of Biology  
Bryn Mawr College  
101 N. Merion Ave.  
Bryn Mawr, PA 19010  
6105265095

Education

B.A. in Biology,

9/e43 3U54 55.226j EM[(8j /TT(m nv0.018 Tc 0.018U65.226jt46l)-46l)-4i 0 Td

### Administrative Positions

9/99 5/06 Chair of Biology, Bryn Mawr College  
9/96 5/02 Program Chair, Neural and Behavioral Sciences  
9/03 present Minor in Neuroscience (formally Neural and Behavioral Sciences  
Concentration) Adviser Biology  
9/08 5/09 Director of the Center for Science in Society  
9/13 present Head of Minor in Neuroscience  
9/15 5/15 Chair Faculty Curriculum Committee  
5/14 present Director STEM Posse Program and Summer Immersion Program  
8/15 present Faculty Fellow for LILAC

### Publications

#### Peer reviewed research articles

Brodfehrer, P.D. and Fourtner, C.R. (1983) Reflexes evoked by the femoral and coxal chordotonal organs in the cockroach, *Periplaneta americana*. *Comp. Biochem. Physiol.* 74A:169-174.

Brodfehrer, P.D. and Friesen, W.O. (1984) A sensory system initiating swimming activity in the medicinal leech. *J. Comp. Biol.* 108:343-355.

Friesen, W.O. and Brodfehrer, P.D. (1984) Identification of neurons in the leech through local manipulations. *J. Exp. Biol.* 113:445-455.

Brodfehrer, P.D. and Friesen, W.O. (1986) Stimulation to undulation: A neuronal pathway for the control of swimming in the leech. *Science* 234:1002-1004.

Brodfehrer, P.D. and Friesen, W.O. (1986) Initiation of swimming activity by trigger neurons in the leech subesophageal ganglion. I. Output connections of Tr1 and Tr2. *J. Comp. Physiol. A* 159:485-502.

Brodfehrer, P.D. and Friesen, W.O. (1986) Initiation of swimming activity by trigger neurons in the leech subesophageal ganglion. II. Role of segmental swimming interneurons. *J. Comp. Physiol. A* 159:503-510.

Brodfehrer, P.D. and Friesen, W.O. (1986) Initiation of swimming activity by trigger neurons in the leech subesophageal ganglion. III. Sensory input to Tr1 and Tr2. *J. Comp. Physiol. A* 159:515-519.

Brodfehrer, P.D. and Friesen, W.O. (1986) Control of leech swimming activity by cephalic ganglia. *J. Neurobiol.*

**Brodfehrer, Peter D.**  
*Curriculum vitae*

May, M. L., Brodfehrer, P.D. and Hoy, R.R. (1988) Kinematic and aerodynamic aspects of ultrasound induced negative phonotaxis in flying Australian field crickets (*Telogeomys oceanicus*). *J. Comp. Physiol. A* 164:243-249.

Brodfehrer, P.D. and Hoy, R.R. (1989) Integration of ultrasound and flight inputs on descending neurons in the cricket brain. *Brain* 112: 157-171.

Hoy, R., Nolen, T. and Brodfehrer, P. (1989) The neuroethology of acoustic startle and escape in flying insects. In: Principles of Sensory-Motor Integration. In: av6

**Broduehrer, Peter D.**  
*Curriculum vitae*

Cellucci, C.J., Broduehrer, P.D., AceraPozzi, R., Dobrovoly, H., Engler, E., Thompson, R., Los, J. and Albano, A.M. (2000) Linear and nonlinear measures predict swimming in the leech. *Phys. Rev. E* 62, 4826-4834.

Broduehrer, P.D. and Thorogood, M.S.E. (2001). Identified Neurons and the Initiation of Leech Swimming. *Prog Neurobio.* 63(7) 381.

Albano, A. M., Brodueher, P. D., Tapyrik, L., and Sundera, S. (2006) Linear and nonlinear properties of prestimulus ventral cord signals distinguish swimming response of the leech intracellular stimulation. *International Journal of Bifurcation and Chaos* 16(1) 45-55.

Broduehrer, P.D., Tapyrik, L., Convery, M., Zekavat, G., and Pietras, N. (2006) Modification of Behavioral Responsiveness Following Foraging for Artificial Blood in the Medicinal Leech. *Comp. Physiol. A.* 192:817-825.

Broduehrer, P.D., McCormick, K., Garybeal, C., Tapyrik, L., and Albano, A.M. (2008) Initiation of Swimming or Crawling by a Trigger Interneuron in the Medicinal Leech. *Neurosci.* 8:3139.

Meacham, C.A., Broduehrer, P.D., Watkins, J.A., and Shaffner, J. (2008) Developmentally regulated sodium channel subunits are differentially sensitive to containing pyrethroids. *Toxicology and Applied Pharmacology.* 231(3) 273

Albano, A.M., Broduehrer, P.D., Cellucci, C.J., Tigno, X.T., and Rapp, P.E. (2009) Time Series Analysis, or the Quest for Quantitative Measures of Time Dependent Behavior. *Philippine Science Letters,* 1:1830.

Mullins OJ, Broduehrer P D, Jusufovi S, Hackett JH, Friesen WO (2015) Specialized cephalic regions and sensory inputs that control locomotion in leeches. *J. Comp. Physiol. A* 198:97-108.

**Technical Notes, Gene Sequences, and Laboratory Exercises**

Broduehrer, P.D. and Parker, H.J. (1994) Neurophysiologist Analysis. In: SuperScope Applications GW Instruments, Somerville, MA.

Sweeney, L.M., Broduehrer, P.D. and Raughley, B. (2004) An Introductory Biology Laboratory that Uses Enzyme Histochemistry to Teach Students about Skeletal Muscle Fiber Types. *Adv. Physiol. Educ* 28: 228.

Broduehrer, P.D. glutamate receptor 1, *partial* *verbanaa* 78.

**Brodfehrer, Peter D.**  
*Curriculum vitae*

Brodfehrer, P.D. and Friesen, W.O. (1982) Activation of vibration receptors initiates swimming in a semi-intact leech preparation. Neurosci. Abstr. Vol. 8, pp. 529.

Brodfehrer, P.D. and Friesen, W.O. (1983) Responses of vibration receptors in the medicinal leech to head stimulation. Neurosci. Abstr. Vol. 9, pp. 324.

Brodfehrer, P.D. and Friesen, W.O. (1984) Swim initiation by neurons in the leech brain occurs by independent pathways. Neurosci. Abstr. Vol. 10, pp. 148.

Brodfehrer, P.D. and Hoy, R.R. (1987) Effect of auditory deafferentation on the synaptic connectivity of identified interneurons in adult crickets. Neurosci. Abstr. Vol. 13, pp. 1144.

May, M. L. and Brodfehrer, P.D. (1987) Changes in wing parameters in Teleogryllus oceanicus due to ultrasonic stimuli. Neurosci. Abstr. Vol. 13, pp. 398.

May, M.L., Land, B.R., Brodfehrer, P.D. and Hoy, R.R. (1988) A three-dimensional model of the ultrasound-induced negative phonotactic response in the Australian field cricket (Teleogryllus oceanicus). Neurosci. Abstr. Vol. 14, pp. 311.

Brodfehrer, P.D., May, M.L. and Hoy, R.R. (1988). Ultrasonic neurons in the brain of crickets. Neurosci. Abstr. Vol. 14, pp. 311.

Brodfehrer, P.D. and Cohen, A.H. (1990) Localization of glutamate immunoreactivity in the leech central nervous system. Neurosci. Abstr. Vol. 16, pp. 306.

Johnson, B.R., May, M.L. and Brodfehrer, P.D. (1990) Intracellular recording from brain cells in the land snail: A student laboratory exercise for examining neuronal excitability. Physiologist 33:40.

Johnson, B.R., May, M.L. and Brodfehrer, P.D. (1991) Current events: A student laboratory exercise for examining ionic currents under voltage clamp in snail neurons. Neurosci. Abstr. Vol. 17, pp. 516.

Brodfehrer, P.D. (1992) Suppression of activity in an identified interneuron predicts the initiation of leech swimming. Bird International Congress of Neuroethology Abstract # 244.

Brodfehrer, P.D., Burns, A and Berg, M. (1993) Regulation of segmental swimming interneurons by a pair of identified interneurons in the leech head ganglion. Neurosci. Abstr. Vol. 19, pp. 1600.

Grobstein, P., Brodfehrer, P. and Oristaglio, J. (1993) The fill problem: motor choice and intrinsic value. Neurosci. Abstr. Vol. 19, pp. 222.36



Jones, R.F. and Brodfehrer, P.D.(2002) Intracellular calcium level and long  
excitation in leech neurons. The 13





Brøfner, Peter D.  
*Curriculum vitae*

Brodie, Peter D.  
*Curriculum vitae*

- 9/06 8/10 National Science Foundation Collaborative Research on the Control of Animal Movements. (Award = \$159,394) includes one year no cost extension
- 5/07 8/07 REU supplement to my National Science Foundation grant. (Award = \$5,600)

**Institutional Grants**

- 6/04 5/09 Sherman Fairchild Foundation Scientific Internship Program, Phase IX. Program Director (Total Award = \$484,438).
- 9/04 8/08 Howard Hughes Medical Institute Undergraduate Science Education Program. Program Director.

Brodie, Peter D.  
*Curriculum vitae*

- 5/95 Participant in Camden Conference on the Brain for Educators, May 20, 1995. University of Rutgers-Camden.
- 12/96 NEC Research Institute, Princeton, NJ.
- 7/99 University of Kaiserslautern, Department of Physiology, Germany.
- 3/01 Invited to serve on 2001 Major Research Instrumentation (MRI) Advisory Panels National Science Foundation. Declined invitation due to teaching obligations.
- 9/01 Dickinson College, Department of Biology
- 2/03 Member of 2003 NSF Graduate Research Fellowship panel in Neuroscience, Physiology and Microbiology.
- 3/03



7/09 Outside reviewer for promotion to associate professor at the University of  
Richmond.  
11/09







Brdfeher, Peter D.  
*Curriculum vitae*

Chair of the Search Committee for Instructor to teach post ~~baccalaureate~~ <sup>Baccalaureate</sup> *Biology*, spring 2004. Hired Dr. Wien.

Chair of the Search Committee for the Biochemist / Molecular Biologist position in *Biology*, 2002-2006. Offered job to top candidate, declined position.

Play a key role in the restructuring of secretarial support for the Departments of *Biology*, *Geology* and *Chemistry*, 2005-2006.

Biology representative to the Science Node, 2007-2008.

Associate Director of Center for Science and Society, 2007

Hosted classroom visits for prospective students attended *Introductory Biology* (Biology 102)25.221(o)-ch Co

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*Curriculum vitae*

- Member of the Search Committee for Laboratory Instructor position in Biology, Spring 2013.
- Member of the Search Committee for Computational Ecologist Biology fall 2013.
- Talk entitled, "Time Scales in Biology" for Family Weekend, October 2013.
- Member of Undergraduate Curriculum Committee, 2013-
- Member of Quantitative Reading Steering Committee. 2013 -present
- Member of *Ad hoc* Search Committee for Opportunity Hire in Mathematics, Fall 2014.

Majority Inspector for Haverford Township 5<sup>th</sup> ward 1 precinct