

Sean M. Buchanan, Ph.D.

The Rowland Institute at Harvard
100 Edwin Land Blvd.
Cambridge, MA 02142

email:buchanan@rowland.harvard.edu
Phone: (617) 851-9649
Fax: (617) 497-4627

EDUCATION

- 2003-2009 **Ph.D. in Biochemistry**
Harvard University, Department of Molecular and Cellular Biology
- 2002-2003 **M.A. in Biology**
Harvard University, Department of Molecular and Cellular Biology
- 1998-2002 **B.S. in Molecular Biology**
Awarded *magna cum laude* and with Departmental Honors
University of Pittsburgh, Department of Biological Sciences

RESEARCH EXPERIENCE

- 2009-Present **Postdoctoral Fellow, Laboratory of Dr. Benjamin de Bivort**
The Rowland Institute at Harvard
Studies of locomotion, plasticity in gait and recovery from injury in *Drosophila*.
- 2003-2009 **Ph.D. Student and Postdoctoral Fellow, Laboratory of Dr. Tom Maniatis**
Harvard University, Department of Molecular and Cellular Biology
Thesis title: Studies of Protocadherin Function.
Investigated the regulation of intracellular signaling by the mouse Protocadherins during brain development.
- 2004-2009 **Coordinator, Harvard Life Sciences Sequencing Facility**
Harvard University
Management and operation of the DNA sequencing and genotyping facility including the training and supervision of staff members.
- 2001 **Summer Undergraduate Research Fellow, Laboratory of Dr. Allen B. Clarkson**
NYU School of Medicine, Department of Medical and Molecular Parasitology
Studies of the inhibition of respiratory pathways in *Pneumocystis carinii* and *Trypanosoma brucei*.
- 1999-2002 **Undergraduate Research Fellow, Laboratory of Dr. Jeffrey L. Brodsky**
University of Pittsburgh, Department of Biological Sciences
Studies of the degradation of misfolded proteins in the endoplasmic reticulum of *Saccharomyces cerevisiae*.

TEACHING EXPERIENCE

- 2004 **Teaching Fellow**; MCB155, Molecular Mechanisms of Gene Regulation
Harvard University
- 2003 **Teaching Fellow**; BS52, Introduction to Molecular Biology
Harvard University

UNIVERSITY SERVICE

- 2010 **Member**; Application Review Committee for Undergraduate Summer Internship Program
Harvard Stem Cell Institute
- 2009 **Member**; Application Review Committee for Undergraduate Summer Internship Program
Harvard Stem Cell Institute
- 2008 **Scientific Consultant**; Finding a Cure for Leukemia: A Stem Cell Story. A documentary film produced by HSCI.
Harvard Stem Cell Institute

COMMUNITY SERVICE

- 2010 **Volunteer**
Museum of Science, Boston
Informal science demonstrations and discussions for the general public.

PROFESSIONAL ACTIVITIES

- 2003-Present **Founding Member**; Multi-year Journal Club
Harvard University, Department of Molecular and Cellular Biology
A journal club comprised of current and former graduate students and postdocs. Weekly meetings with discussions covering fields such as cellular, molecular and developmental biology, neuroscience, evolution, zoology, astronomy, physics, mathematics and the history of science.

HONORS AND AWARDS

- 2011 The Genetics Society of America Poster Award, First Place, 52nd Annual *Drosophila* Research Conference
- 2004 Bok Center Certificate of Distinction in Teaching, Harvard University
- 2002 Phi Beta Kappa Honors Society, University of Pittsburgh
- 2001 Chancellor's Undergraduate Research Award, University of Pittsburgh
- 2000-2002 NSF Research Experience for Undergraduates Award, University of Pittsburgh

CONFERENCE PARTICIPATION

- March, 2011 52nd Annual *Drosophila* Research Conference
The Genetics Society of America
San Diego, CA
Poster: "Handedness in *Drosophila* Locomotor Behavior", **Sean M. Buchanan** and Benjamin L. de Bivort.
- March, 2011 Vision in Flies
Janelia Farm Research Campus
Ashburn, VA
Poster: "Handedness in *Drosophila* Locomotor Behavior", **Sean M. Buchanan** and Benjamin L. de Bivort.
- March, 2010 Genes and Behavior
Gordon Research Conferences
Ventura, CA
Poster: "Plasticity in *Drosophila* Locomotion Following Injury", **Sean M. Buchanan**, Jamey S. Kain and Benjamin L. de Bivort.
- October, 2009 Neurobiology of *Drosophila*
Cold Spring Harbor Laboratory
Cold Spring Harbor, NY

PUBLICATIONS

- Buchanan SM**, Schalm SS and Maniatis T. Proteolytic processing of protocadherin proteins requires endocytosis. (2010) *PNAS* **107**(41):17774-17779.
- Schalm SS, Ballif BA*, **Buchanan SM***, Phillips GR and Maniatis T. Phosphorylation of protocadherin proteins by the receptor tyrosine kinase Ret. (2010) *PNAS* **107**(31):13894-9. (*These authors contributed equally.)
- Palmer EA, Kruse KB, Fewell SW, **Buchanan SM**, Brodsky JL and McCracken AA. Differential requirements of novel A1PiZ degradation deficient (ADD) genes in ER-associated protein degradation. (2003) *J. Cell Sci.* **116**:2361-73.