

# DANIELLE R. HAMILL

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## FACULTY POSITION:

**Department of Zoology**, Ohio Wesleyan University, Delaware, OH

- **Assistant Professor:** August 2001 to August 2006
- **Associate Professor:** August 2006 – August 2012
- **Professor:** August 2012 - present

**Teaching responsibilities:** Introduction to Cell Biology (BIOL 120), Genetics (BIOL 271/272), Developmental Biology (ZOOLOGY 333), Seminar in Developmental Genetics (ZOOLOGY 499), Freshman Honor's Tutorial (ZOOLOGY 190), Independent Study (ZOOLOGY 490), Directed Readings and Apprenticeships (ZOOLOGY 491 and 495), The OWU Experience (UC160)

**Research interests:** Regulation of cell division and early developmental processes in *C. elegans* and other nematodes.

**Laboratory research mentor:** 65 Ohio Wesleyan undergraduate students – 2002 to present

## POSTDOCTORAL EXPERIENCE:

**Postdoctoral Research Associate**, University of Oregon, Eugene, Oregon – 1997 - 2001

**Mentor:** Dr. Bruce Bowerman

**Research:** Isolation and characterization of temperature-sensitive cell division mutants in *Caenorhabditis elegans*.

## EDUCATION:

**Ph.D. in Cell Biology**, University of Kansas, Lawrence, Kansas – Graduated with Honors, 1997

**Advisor:** Dr. Kathy A. Suprenant

**Dissertation:** Association of proteins, RNAs, and RNPs with sea urchin microtubules

**B.A. in Biology**, Lawrence University, Appleton, Wisconsin – 1987

## OTHER TEACHING EXPERIENCES:

**Instructor:** Writing in the Disciplines (biochemistry), University of Oregon – 2000, 2001

**Teaching Assistant:** Human and Mammalian Physiology, University of Kansas – 1990-1991

## RESEARCH ASSISTANT EXPERIENCE:

- Department of Microbiology, University of Kansas Medical Center, Kansas City, Kansas – July 1989 - August 1990. Mentor: Dr. David Morrison
  - Characterizing LPS-binding proteins involved in immune responses
- Infectious Disease Lab, University of Iowa, Iowa City, Iowa – August 1987 - May 1989. Mentor: Dr. Bradley Britigan
  - Oxygen consumption and free radical formation in phagocytic cells

## GRANTS, AWARDS & FELLOWSHIPS:

- **Thomas E. Winslow Grant** – 2011. Ohio Wesleyan University, "Identification of a mutant gene in *C. elegans*: a whole genome sequencing approach"

- **Shankland Award for Encouragement of Teachers**, May 2009, Ohio Wesleyan University.
- **NIH AREA (R15)**, “An analysis of cell division mutants in *C. elegans*” – 2004 – 2008, \$150,000.
- **Co-Principal Investigator, National Science Foundation Major Research Instrumentation Grant** – 2001. \$150,000 to purchase a scanning laser confocal microscope at Ohio Wesleyan.
- **American Cancer Society Postdoctoral Fellowship** – 1997 - 2000
- **William King Candlin Memorial Physiology Scholarship** – April 1996, University of Kansas
- **Kansas Health Foundation Predoctoral Scholar** – July 1995 - July 1996, University of Kansas
- **Newmark Award for Biochemical Research** – April 1995, University of Kansas
- **Stanley L. Twomey Memorial Award** – April 1992, Dept. of Physiology and Cell Biology, University of Kansas
- **William Randolph Hearst Fellowship** – July 1991. Marine Biological Laboratory, Woods Hole, MA.
- **Ida H. Hyde Scholarship** – May 1991, University of Kansas

## **SERVICE, COMMITTEES, AND MEMBERSHIPS:**

### **Member**

- American Society for Cell Biology
- American Society of Genetics
- Society for Developmental Biology

### **Zoology Departmental Service**

- Department Chair, 2010-2012
- Nine faculty search committees, 2001-2018
- Botany-Microbiology / Neuroscience faculty search committee 2012, 2013

### **Ohio Wesleyan University Service**

- Faculty Personnel Committee, 2016 – present (Chair 2018-2019)
- Academic Policy Committee, 2014 – 2016
- Trustee-Faculty Liaison Committee, 2014 – 2017
- Faculty Partner – Women’s soccer (2014 - 2018) and volleyball (2018 – present)
- Academic Policy Committee, 2006-2012 (Chair, 2008-2010, 2011-2012)
- Equity and Diversity Council, 2011 - 2014
- Academic Conduct Review Board, 2005 - 2011
- Strategic Planning Committee, 2008 - 2009
- Art and Science Task Force (starting Spring 2009); chair of Junior/senior workgroup (summer – fall 2009)
- APC workgroup for the OWU Plan – Spring 2010
- Member of the Search Committees for the University Registrar – summer 2009, fall 2009
- Ohio Wesleyan representative to the GLCA Academic Council - 2008, 2009
- Pre-physical Therapy Advisor

### **Other Professional Service and Activities**

- Invited participant in the Global Liberal Arts Alliance Convening, Athens, Greece, June 2012
- Faculty for Undergraduate Neuroscience Workshop, Claremont, CA, July 2011
- Invited participant at GLCA Academic Leadership Institute (GALI) – Feb. 2010
- Organizing Committee, *C. elegans* Development and Evolution Meeting, 2008
- Preparing Future Faculty Mentor (Ohio State University) - 2008

- NIH AREA grant review panels: November 2004, March 2006, March 2008
- Participant in the Pedagogy and Student Services for Institutional Transformation (PASS-IT) project: Implementing Universal Design, University of Minnesota – August, 2007
- NSF CAREER Grant Reviewer – November, 2005
- Science Buddies Expert, volunteer
- Science Fair Judge, Sunbury, OH

## MANUSCRIPTS:

- Kenji Sugioka<sup>#</sup>, Danielle R. Hamill<sup>#</sup>, Joshua B. Lowry, Marie E. McNeely\*, Molly Enrick\*, Alyssa C. Richter\*, Lauren E. Kiebler\*, James R. Priess, Bruce Bowerman (2017). Cenriolar SAS-7 acts upstream of SPD-2 to regulate centriole assembly and pericentriolar material formation. *eLife*; 6:e20353. DOI: 10.7554/eLife.20353. (<sup>#</sup>Authors contributed equally.)
- Ramon A. Carreno, David Ordosch\*, Josephine K. Koltek\*, Danielle R. Hamill, and Laura Tuhela (2013). First United States Records of the Rhigonematid Genera *Heth* and *Ruizia* (Nematoda: Rhignoematid) from the Introduced Millipede, *Anadenobolus monilicornis* (Diplopoda: Rhinocricidae) in Key Largo, Florida, U.S.A. *Comparative Parasitology* 80(2): 225-232.
- Sean M. O'Rourke, Clayton Carter, Luke Carter, Sara N. Christensen, Minh P. Jones et al. – including Danielle R. Hamill (2011). A survey of temperature-sensitive, embryonic-lethal mutations in *C. elegans*: 24 alleles of thirteen genes. *PLoS ONE* 6(3), e16644. doi:10.1371/journal/pone/0016644.
- Alex J. Rodriguez, Susan A. Seipel, Danielle R. Hamill, Daniele P. Romancino, Marta Di Carlo, Kathy A. Suprenant, and Edward M. Bonder (2005). Seawi – a sea urchin piwi/argonaute family member is a component of MT-RNP complexes. *RNA* 11(5), 646-656.
- Danielle R. Hamill, Aaron F. Severson, J. Clayton Carter, and Bruce Bowerman (2002). Centrosome maturation and mitotic spindle assembly in *C. elegans* require SPD-5, a protein with multiple coiled-coil domains. *Developmental Cell* 3, 673-684.
- Thimo Kurz, Lionel Pintard, John H. Willis, Danielle R. Hamill, Pierre Gönczy, Matthias Peter, and Bruce Bowerman. (2002). Regulation of microfilament and microtubule function by the Nedd8/Rub1p ubiquitin-like conjugation pathway in *C. elegans*. *Science* 295, 1294-1298.
- Sandra E. Encalada, Paula R. Martin, Jennifer A. Phillips, Rebecca Lyzcak, Danielle R. Hamill, Kathryn A. Swan, and Bruce Bowerman (2000). DNA replication defects delay cell division and disrupt cell polarity in early *Caenorhabditis elegans* embryos. *Developmental Biology* 228(2), 225-238.
- Andy Golden, Penny L. Sadler, Matthew R. Wallenfang, Jill M. Schumacher, Danielle R. Hamill, Gayle Bates, Bruce Bowerman, Geraldine Seydoux, and Diane C. Shakes (2000). Metaphase to anaphase (*mat*) transition-defective mutants in *Caenorhabditis elegans*. *Journal of Cell Biology* 151(7), 1469-1482.
- Aaron F. Severson, Danielle R. Hamill, J. Clayton Carter, Jill Schumacher, and Bruce Bowerman (2000). The Aurora-related kinase AIR-2 recruits ZEN-4/CeMKLP1 to the mitotic spindle at metaphase and is required for cytokinesis. *Current Biology* 10(19), 1162-1171.
- Verna Jantsch-Plunger, Pierre Gönczy, Alper Romano, Heinke Schnabel, Danielle Hamill, Ralf Schnabel, Anthony A. Hyman, and Michael Glotzer (2000). CYK-4: A Rho family GTPase activating protein (GAP) required for central spindle formation and cytokinesis. *Journal of Cell Biology* 149(7), 1391-1404.
- Marc D. Meneghini, Tohru Ishitani, J. Clayton Carter, Naoki Hisamoto, Jun Nimomiya-Tsuji, Christopher J. Thorpe, Danielle R. Hamill, Kunihiro Matsumoto, and Bruce Bowerman (1999).

MAP kinase and Wnt pathways converge to downregulate and HMG-domain repressor in *Caenorhabditis elegans*. *Nature* 399, 793-797.

Danielle R. Hamill, Bonnie Howell, Lynne Cassimeris, and Kathy A. Suprenant (1998). Purification of a WD repeat protein, EMAP, that promotes microtubule dynamics through an inhibition of rescue. *Journal of Biological Chemistry* 273(15), 9285-9291.

Danielle R. Hamill and Kathy A. Suprenant (1997). Characterization of the sea urchin major vault protein: A possible role for vault ribonucleoprotein particles in nucleocytoplasmic transport. *Developmental Biology* 190(1), 117-128.

Danielle R. Hamill, Jill Davis, Julie Drawbridge, and Kathy A. Suprenant (1994). Polyribosome targeting to microtubules: enrichment of specific mRNAs in a reconstituted microtubule preparation from sea urchin embryos. *Journal of Cell Biology* 127(4), 973-984.

Julie L. Halling, Danielle R. Hamill, Mei-Guey Lei, and David C. Morrison (1992). Identification and characterization of lipopolysaccharide-binding proteins on human peripheral blood cell populations. *Infection and Immunity* 60(3), 845-852.

Bradley E. Britigan and Danielle R. Hamill (1990). Effect of the spin trap 5,5 Dimethyl-1-pyrroline-*N*-oxide (DMPO) on human neutrophil function: novel inhibition of neutrophil stimulus response coupling. *Free Radical Biology and Medicine* 8(5), 459-470.

Bradley E. Britigan, Daniel J. Hassett, Gerald M. Rosen, Danielle R. Hamill, and Myron S. Cohen (1989). Neutrophil degranulation inhibits potential hydroxyl-radical formation. *Biochemical Journal* 264(2), 447-455.

Bradley E. Britigan and Danielle R. Hamill (1989). The interaction of 5,5-Dimethyl-1-pyrroline-*N*-oxide with human myeloperoxidase and its potential impact on spin trapping of neutrophil-derived free radicals. *Archives of Biochemistry and Biophysics* 275(1), 72-81.

Bradley E. Britigan, Thomas Coffman, Danielle R. Adelberg, and Myron S. Cohen (1988). Mononuclear phagocytes have the potential for sustained hydroxyl radical production: Use of spin-trapping techniques to investigate mononuclear phagocyte free radical production. *Journal of Experimental Medicine* 168(6), 2367-2372.

## **PRESENTATIONS AT CONFERENCES:**

E.J. Hudgens\*, N. R. Schmidt\*, and D.R. Hamill. Further Investigation of a Novel *Rhabditid* Nematode. Midwest *C. elegans* Meeting, Ypsilanti, MI, April 2018.

K. Sugioka, D.R. Hamill, J.B. Lowry, M.E. McNeely\*, M. Enrick\*, B. Murali\*, L.W. Parsons\*, and B. Bowerman. *C. elegans* Chibby-like protein is a SPD-2 interacting centriolar protein required for proper SPD-2 localization and duplication. 20<sup>th</sup> International *C. elegans* Meeting, Los Angeles, CA, June, 2015 (oral)

J.L. Koltek\*, R.A. Carreno, D.M. Ordosch, and D.R. Hamill. Oxyurid nematodes from cockroaches (Blattaria) in southern Florida with revised morphological characters for *Euryconema paradisa* and *Protrelloides paradoxa*. American Society of Parasitologists, Richmond, VA, July 2012.

L.W. Leister\*, A.R. Massouh\*, A.R. Plaga\*, R.A. Carreno, and D.R. Hamill. Isolation, Identification, and Characterization of Free-Living Nematodes. *C. elegans* Development, Cell Biology, and Gene Expression Meeting, Madison, WI, June 2012.

D.R. Hamill, R. Khare\*, B.L. Buchenroth\*, and R.A. Carreno. Characterization of cell division and early development in an *Oscheius* sp. (Nematoda: Rhabditida). *Molecular Biology of the Cell*, 21, 1535. American Society of Cell Biology Meeting, Philadelphia, PA, Dec. 2010

- D.R. Hamill, M.E. McNeeley\*, M.K. Everett\*, A.P. Gearica\*, S. Mazhar\*, M. Price, and B. Bowerman. Analysis of a spindle assembly mutant in *C. elegans*. 17<sup>th</sup> International *C. elegans* Meeting, Los Angeles, CA, June, 2009.
- R. Khare\*, R.A. Carreno, and D.R. Hamill. Analysis of cell division and development in a *Rhabditis* sp. 16<sup>th</sup> International *C. elegans* Meeting, Los Angeles, CA, June, 2007.
- R. Khare\*, S. Khan\*, and D.R. Hamill. Phenotypic and genetic analysis of a cell division mutant in *Caenorhabditis elegans*. Sigma Xi Research Conference, Detroit, MI, November, 2006.
- M.E. McNeely\*, M.K. Everett\*, and D.R. Hamill. Analysis of a cell division mutant in *Caenorhabditis elegans*. Sigma Xi Research Conference, Detroit, MI, November, 2006.
- D.R. Hamill, R. Khare\*, S.Q. Khan\*, L.S. Corthell\*, K.J. McCarthy\*, and J.B. Phillips. A tale of two embryonic-lethal cell division mutants. *C. elegans* Germline and Development Meeting, Madison, WI, June, 2006.
- D.R. Hamill, E.A. Carleton\*, L.S. Corthell\*, J.S. Fabritius\*, K.J. McCarthy\*, and J.B. Phillips. Analysis of cell division mutants in *C. elegans*. 15<sup>th</sup> International *C. elegans* Meeting, Los Angeles, CA, June, 2005.
- L.S. Corthell\*, E.A. Carleton\*, and D.R. Hamill. Analysis of *csc-2*, a cell division mutant in *C. elegans*. Society for Developmental Biology Mid-Atlantic Regional Meeting, Washington, D.C., May, 2005.
- K.J. McCarthy\*, J.S. Fabritius\*, and D.R. Hamill. Analysis of *spd-6*, a cell division mutant in *C. elegans*. Society for Developmental Biology Mid-Atlantic Regional Meeting, Washington, D.C., May, 2005.
- D.R. Hamill, S. Reiss\*, J.B. Phillips, J.W. DeVore\*, C. Echols\*, S.E. Encalada, and B. Bowerman. Analysis of temperature-sensitive cell division mutants in early embryos. 14<sup>th</sup> International *C. elegans* Meeting, Los Angeles, CA, June, 2003.
- T. Kurz, L. Pintard, J.H. Willis, D.R. Hamill, P. Gonczy, M. Peter and B. Bowerman. The Ubiquitin-like Nedd8 protein modification pathway regulates microtubule and microfilament function in the early *C. elegans* embryo. European Worm Meeting, 2002.
- D.R. Hamill, J.C. Carter, and B. Bowerman. SPD-5 is a novel centrosomal protein required for mitotic spindle assembly. 13<sup>th</sup> International *C. elegans* Meeting, Los Angeles, CA 2001 (oral)

\* denotes undergraduate co-authors

### INVITED TALKS:

- “Why are we what we are? The science of sexuality”, co-presented with Kyle Simon, OWU ’15. Women in Science Seminar, Ohio Wesleyan University, Delaware, OH - March 2015
- “Characterization of a Cell Division Mutant in *C. elegans*”, Ohio Wesleyan Science Seminar Series, Delaware, OH – December, 2014.
- “On cell division and the division of labor: doing research with undergraduates”, Ohio Wesleyan Teaching, Learning, Cross-Cultural Programming Faculty Seminar Series, Delaware, OH - December, 2009.
- “Analysis of a mitotic spindle assembly mutant in *C. elegans*”, Ohio Wesleyan Science Seminar Series, Delaware, OH – September, 2008.

- “My life as a professor at a liberal arts college (and how I came to be here)”, Emory University, Atlanta, GA – May 2007.
- “Cell division in *C. elegans*: A tale of two mutants”, Ohio Worm Meeting, Delaware, OH – November, 2005.
- “Analysis of cell division mutants in *C. elegans* embryos”, Smith College, Northampton, MA – February, 2004.
- “Analysis of cell division mutants in *C. elegans* embryos”, Colby College, Colby, ME – December, 2003.
- “Analysis of cell division mutants in *C. elegans* embryos”, Kenyon College, Gambier, OH – November, 2002.
- “Analysis of cell division mutants in *C. elegans* embryos”, Ohio Wesleyan Science Seminar Series, Delaware, OH – September, 2002.
- “Conditional Cell Division Mutants in *Caenorhabditis elegans*”, Grinnell College, Grinnell, IA – September, 2000.