DANIELLE R. HAMILL

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Faculty Position:

Department of Biological Sciences (formerly 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), Human Biology (BIOL 101), Developmental Biology (BIOL 333), Seminar in Developmental Genetics (ZOOL 499), Freshman Honor's Tutorial (ZOOL 190), Genetics and Society Honors Seminar (ZOOL 201.1), Independent Study (BIOL 490), Directed Readings and Internships (BIOL 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: 70 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 *Caenhorabditis 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)

Selected Grants, Awards, and Fellowships:

- **Thomas E. Wenzlau Grant,** Ohio Wesleyan University, "CRISPR and Auxin-inducible degradation in C. *elegans* and other nematodes" - 2019
- **Thomas E. Wenzlau Grant**, Ohio Wesleyan University, "Identification of a mutant gene in *C. elegans*: a whole genome sequencing approach" - 2011
- **Shankland Award for Encouragement of Teachers,** Ohio Wesleyan University - 2009
- **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**, $150,000 to purchase a scanning laser confocal microscope at Ohio Wesleyan – 2001
- **American Cancer Society Postdoctoral Fellowship** – 1997 – 2000

- **William King Candlin Memorial Physiology Scholarship**, University of Kansas - 1996
- **Kansas Health Foundation Predoctoral Scholar,** University of Kansas – 1995-1996
- **Newmark Award for Biochemical Research**, University of Kansas - 1995
- **Stanley L. Twomey Memorial Award,** Dept. of Physiology and Cell Biology, University of Kansas - 1992
- **William Randolph Hearst Fellowship**, Marine Biological Laboratory - 1991
- **Ida H. Hyde Scholarship**, University of Kansas - 1991

Memberships, Committees, and Service

Member

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

Departmental Service

- Department Chair, 2010-2012
- Ten faculty search committees, 2001-2022
- Neuroscience faculty search committee 2012, 2013, 2019, 2023

Ohio Wesleyan University Service

- Committee on Academic Programs (2020 – 2024, Chair 2020-2021, 2022-2023)
- Academic Conduct Review Board (2005 – 2011, 2020 – 2023)
- Equal Opportunity Employment Commissioner, 2019 – present. Inclusion advocate on Accounting Faculty Search, 2024.
- Faculty Personnel Committee, 2016 – 2019 (Chair 2018-2019)
- Academic Policy Committee, 2006 – 2012, 2014 – 2016 (Chair, 2008-2010, 2011-2012)
- Trustee-Faculty Liaison Committee, 2014 – 2017
- Faculty Partner – Women's soccer and volleyball, 2014 – present
- Equity and Diversity Council, 2011 - 2014
- Strategic Planning Committee, 2008 - 2009
- Art and Science Task Force, chair of Junior/senior workgroup, 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

- Outside expert and presenter on revising course evaluations. Presented a talk "Why and How we Changed Course Evaluations at OWU". Denison University, Granville, OH – Sept. 2023.
- Presenter and participant, AAC&U General Education, Pedagogy, and Assessment Conference, New Orleans, LA, Feb. 2023.
- Genetics Content Expert for NSF-funded Genetics Content Assessment Study to examine student performance on genetics assessments. (PIs: Avena, Knight, Briggs, and Talbot, University of Colorado, Boulder), 2015 – 2017.
- Participant in the Allied Genetics Conference Teaching Workshops, Orlando, FL 2016.
- Invited participant in the Global Liberal Arts Alliance Convening, Athens, Greece, 2012
- Faculty for Undergraduate Neuroscience Workshop, Claremont, CA, 2011

- Invited participant at GLCA Academic Leadership Institute (GALI), 2010
- Organizing Committee, *C. elegans* Development and Evolution Meeting, 2008
- Preparing Future Faculty Mentor (Ohio State University), 2008
- NIH AREA grant review panels: 2004, 2006, 2008
- Participant in the Pedagogy and Student Services for Institutional Transformation (PASS-IT) project: Implementing Universal Design, University of Minnesota, 2007
- NSF CAREER Grant Reviewer, 2005
- Science Buddies Expert
- Science Fair Judge, Sunbury, OH

Peer-reviewed publications:

Julie A. Merkle, Olivier Devergne, Seth M. Kelly, Paula A. Croonquist, Cory J. Evans, Melanie A. Hwalek, Victoria L. Straub, Danielle R. Hamill, David P. Puthoff, Kenneth J. Saville, Jamie L. Siders, Zully J. Villanueva Gonzalez, Jackie K. Wittke-Thompson, Kayla L. Bieser, Joyce Stamm, Alysia D. Vrailas-Mortimer, Jacob Kagey (2023). Fly-CURE, a Multi-Institutional CURE using Drosophila, Increases Students' Confidence, Sense of Belonging, and Persistence in Research. Journal of Microbiology and Biology Education, vol 24(3): e00245-22. https://doi.org/10.1128/jmbe.00245-22

Mast E, Bieser KL, Abraham-Villa M, Adams V, Akinlehin AJ, Aquino LZ, Austin JL, Austin AK, Beckham CN, Bengson EJ, Bieszk A, Bogard BL, Brennan RC, Brnot RM, Cirone NJ, Clark MR, Cooper BN, Cruz D, Daprizio KA, DeBoe J, Dencker MM, Donnelly LL, Driscoll L, DuBeau RJ, Durso SW, Ejub A, Elgosbi W, Estrada M, *Evins K, Fox PD, France JM, Franco Hernandez MG, Garcia LA, Garl O, Gorsuch MR, Gorzeman-Mohr MA, *Grothouse ME, Gubbels ME, Hakemiamjad R, Harvey CV, Hoeppner MA, Ivanov JL, Johnson VM, Johnson JL, Johnson A, Johnston K, Keller KR, Kennedy BT, *Killian LR, Klumb M, Koehn OL, Koym AS, Kress KJ, Landis RE, Lewis KN, Lim E, Lopez IK, Lowe D, Luengo Carretero P, Lunaburg G, Mallinder SL, Marshall NA, Mathew J, Mathew J, Mcmanaway HS, Meegan EN, Meyst JD, Miller MJ, Minogue CK, Mohr AA, Moran CI, *Moran A, Morris MD, Morrison MD, Moses EA, Mullins CJ, Neri CI, *Nichols JM, Nickels BR, Okai AM, Okonmah C, Paramo M, Paramo M, Parker SL, Parmar NK, Paschal J, Patel P, Patel D, *Perkins EB, *Perry MM, Perry Z, Pollock AA, Portalatin O, Proffitt KS, Queen JT, Quemeneur AC, *Richardson AG, Rosenberger K, Rutherford AM, Santos-Perez IX, Sarti CY, Schouweiler LJ, Sessing LM, Setaro SO, Silvestri CF, *Smith OA, Smith MJ, Sumner JC, Sutton RR, Sweckard L, Talbott NB, Traxler PA, Truesdell J, Valenti AF, Verace L, Vijayakumar P, Wadley WL, *Walter KE, Williams AR, Wilson TJ, Witbeck MA, Wobler TM, Wright LJ, Zuczkowska KA, Devergne O, Hamill DR, Shah HP, Siders J, Taylor EE, Vrailas-Mortimer AD, Kagey JD. (2022). Genetic mapping of U*ba3*$^{O.2.2}$, a pupal lethal mutation in *Drosophila melanogaster*. MicroPublication Biol. https://doi.org/10.17912/micropub.biology.000542

Molly C Jud, Josh Lowry, Thalia Padilla, Erin Clifford, Yuqi Yang, Francesca Fennell, Alexander K Miller, Danielle Hamill, Austin M Harvey, Martha Avila-Zavala, Hong Shao, Nhan Nguyen Tran, Zhirong Bao, Bruce Bowerman, A genetic screen for temperature-sensitive morphogenesis-defective *Caenorhabditis elegans* mutants, *G3 Genes|Genomes|Genetics*, Volume 11, Issue 4, April 2021, jkab026, https://doi.org/10.1093/g3journal/jkab026

Siders, JL; Bieser, KL; Hamill, DR; Acosta, EC; Alexander, OK; Ali, HI; Anderson, MJ; Arrasmith, HR; Azam, M; Beeman, NJ; Beydoun, H; Bishop, LJ; Blair, MD; Bletch, B; Bline, HR; Brown, JC; Burns, KM; Calagua, KC; *Chafin, L; *Christy, WA; Ciamacco, C; Cizauskas, H; *Colwell, CM; *Courtright, AR; Diaz Alavez, L; Ecret, RI; Edriss, F; Ellerbrock, TG; Ellis, MM; Extine,

EM; Feldman, E; Fickenworth, LJ; Goeller, CM; Grogg, AS; Hernandez, Y; Hershner, A; Jauss, MM; Jimenez Garcia, L; Franks, KE; Kazubski, ET; Landis, ER; Langub, J; Lassek, TN; Le, TC; Lee, JM; Levine, DP; *Lightfoot, PJ; Love, N; Maalhagh-Fard, A; Maguire, C; McGinnis, BE; Mehta, BV; Melendrez, V; Mena, ZE; Mendell, S; Montiel-Garcia, P; Murry, AS; Newland, RA; Nobles, RM; Patel, N; Patil, Y; Pfister, CL; Ramage, V; Ray, MR; Rodrigues, J; Rodriquez, VC; Romero, Y; Scott, AM; Shaba, N; Sieg, S; Silva, K; Singh, S; Spargo, AJ; Spitnale, SJ; Sweeden, N; Tague, L; Tavernini, BM; Tran, K; Tungol, L; Vestal, KA; Wetherbee, A; Wright, KM; Yeager, AT; Zahid, R; Kagey, JD (2021). Genetic Mapping of a new *Hippo* allele, $Hpo^{N.1.2}$, in *Drosophila melanogaster*. microPublication Biology. https://doi.org/10.17912/micropub.biology.000383

Kenji Sugioka[#], Danielle R. Hamill[#], 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. ([#]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-pyrroloine-*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.

Conference Presentations:

A. Biser, N. Comorau, D.R. Hamill, and D. Markwardt. Fast and (Only a Little) Furious: How to Reform your Gen Eds in Under a Year. AAC&U General Education, Pedagogy, and Assessment Conference, New Orleans, LA, Feb. 2023.

K. Bieser, D. Hamill, M. Hwalek, J. Merkle, K. Saville, J. Siders, J. Stamm, V. Straub, A. Vrailas-Mortimer, and J.D. Kagey. Fly-CURE: A consortium of undergraduate genetics laboratory courses mapping and characterizing *Drosophila* EMS mutants. Genetics Society of America, Washington, DC (but virtual), April, 2020.

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. 20th 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*. 17th 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.* 16th 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*. 15th 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. 14th 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. 13th International *C. elegans* Meeting, Los Angeles, CA 2001 (oral)

* denotes undergraduate co-authors, ^ undergraduate presenting author

Invited Talks:

"Identification and Characterization of New Nematodes", Ohio Wesleyan University Genetics Club, Delaware, OH – March 18, 2024.

"Identification and Characterization of New Nematodes", Kenyon Biology Lecture Series, Gambier, OH - Oct. 12, 2023.

"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.