

Darrell J. Killian, Ph.D.

Professor
Colorado College

Department of Molecular Biology
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EDUCATION

Ph.D.	Biology: Developmental Genetics	New York University	2004
BA	Molecular Biology and Biochemistry	Wesleyan University	1998

TEACHING EXPERIENCE

Professor (2025 – present)

Colorado College, Department of Molecular Biology

Recent Courses: Introduction to Molecular and Cellular Biology (MB131)
Genetics (MB231)
Laboratory in Advanced Genetics (MB355)
Stem Cell Biology (MB405)
Developmental Neurobiology (MB415)
Senior Capstone in Molecular Biology (MB498)
The Science and Ethics of Genome Editing (CC100)
Mentoring Student Research and Theses

Associate Professor with Tenure (2016 – 2025; Chair 2017 – 2018, 2021 – 2025)

Colorado College, Department of Molecular Biology

Assistant Professor (2011 – 2016)

Colorado College, Biology Department/Department of Molecular Biology

Assistant Professor (2009 – 2011)

The College of New Jersey, Department of Biology

Visiting Professor (2008 – 2009)

Colorado College, Biology Department

Graduate Teaching Assistant (1999 – 2001)

New York University, Department of Biology



Undergraduate Teaching Assistant (1997 – 1998)
Wesleyan University, Molecular Biology and Biochemistry

RESEARCH EXPERIENCE

Principal Investigator (2011 – present)
Colorado College, Department of Molecular Biology

Principal Investigator (2009 – 2011)
The College of New Jersey, Department of Biology

Postdoctoral Fellow (2004 – 2008)
University of Colorado, MCD Biology
Ruth L. Kirschstein National Research Service Award – National Institutes of Health
Project: The regulation of sex-specific programmed cell death in *C. elegans*
Advisor: Ding Xue, Ph.D.

Graduate Student (2000 – 2004)
New York University, Department of Biology
Thesis Project: Proliferation, differentiation, and, tumor formation: roles of the developing gonadal sheath in patterning the *C. elegans* germ line
Advisor: E. Jane A. Hubbard, Ph.D.
Committee: R. Lehmann, C. Desplan, S. Small, and F. Piano

Graduate Lab Rotations (1999 – 2004)
New York University, Department of Biology
Germline development in *C. elegans* (Lab: E. Jane Albert Hubbard, Ph.D.)
Development of roots in plant model organism *A. thaliana* (Lab: Philip Benfey, Ph.D.)
Cell cycle regulation in fission yeast *S. pombe* (Lab: Eric Chang, Ph.D.)

Research Technician (1998 – 1999)
Howard Hughes Medical Institute/ The Rockefeller University
Projects: *Drosophila* eye-development and embryonic patterning
Advisor: Claude Desplan, Ph.D.

RESEARCH PUBLICATIONS

(# mentored undergraduates, * authors contributed equally, ^ co-corresponding authors)

Spendier K[^], Olesnicky EC[^], Forand D, Wolf M[#], **Killian DJ**[^] (2021). CPB-3 and CGH-1 localize to motile particles within dendrites in *C. elegans* PVD sensory neurons. ***BMC Research Notes*** 311.

Titus MB, Wright EG, Bono JM, Poliakon AK, Goldstein BR, Super MK, Young LA, Manaj M, Litchford M, Reist NE, **Killian DJ**, Olesnicky EC (2021). The conserved alternative splicing factor caper regulates neuromuscular phenotypes during development and aging. ***Developmental Biology*** 473, 15-32.

Olesnick EC, **Killian DJ** (2020). The cytoplasmic polyadenylation element binding protein (CPEB), Orb, is important for dendrite development and neuron fate specification in *Drosophila melanogaster*. **Gene** 738.

Olesnick EC, Antonacci S, Popitsch N, Lybecker MC, Titus MB, Valadez R, Derkach PG, Marean A, Miller K[#], Mathai SK[#], **Killian DJ** (2018). Shep interacts with posttranscriptional regulators to control dendrite morphogenesis in sensory neurons. **Developmental Biology** 444, 116-128.

Schachtner LT, Sola IE, Forand D, Antonacci S, Postovit AJ, Mortimer NT, **Killian DJ**[^], Olesnick EC[^] (2015). *Drosophila* Shep and *C. elegans* SUP-26 are RNA-binding proteins that play diverse roles in nervous system development. **Development, Genes, and Evolution** 225, 319-330.

- Article highlighted by Springer Animal Sciences – Facebook

<https://www.facebook.com/Springer-Animal-Sciences-1450678515186976/>

Antonacci S, Forand D, Wolf M[#], Tyus C[#], Barney J[#], Kellogg L[#], Simon MA[#], Kerr G[#], Wells KL[#], Younes S, Mortimer NT, Olesnick EC[^], **Killian DJ**[^] (2015). Conserved RNA-Binding Proteins Required for Dendrite Morphogenesis in *Caenorhabditis elegans* Sensory Neurons. **G3: Genes, Genomes, Genetics** 5(4) 639-653.

- Article highlighted in the *G3 Spotlight 2015*

<http://genestogenomes.org/2015-g3-genesgenomesgenetics-spotlight/>

Wells KL[#], Rowneki M[#], **Killian DJ** (2015). A splice acceptor mutation in *C. elegans* *daf-19/Rfx* disrupts functional specialization of male-specific ciliated neurons but does not affect ciliogenesis. **Gene** 559, 196-202.

Olesnick EC, **Killian DJ**, Rathjen AR, Garcia E, Sola IE, Gavis ER (2014). Extensive use of RNA binding proteins in dendrite morphogenesis of *Drosophila* sensory neurons. **G3: Genes, Genomes, Genetics** 4(2) 297-306.

Killian DJ, Harvey E[#], Johnson P[#], Otori M, Mitani S, Xue D (2008). SKR-1, a homolog of Skp1 and a member of the SCF^{SEL-10} complex, regulates sex-determination and LIN-12/Notch signaling in *C. elegans*. **Developmental Biology** 322, 322-331.

Peden E, **Killian DJ**, Xue D (2008). Cell death specification in *C. elegans*. **Cell Cycle** 7, 2479-2484.

Voutev R^{*}, **Killian DJ**^{*}, Ahn JH, Hubbard EJ (2006). Alterations in ribosome biogenesis cause specific defects in *C. elegans* hermaphrodite gonadogenesis. **Developmental Biology** 298, 45-58.

Killian DJ and Hubbard EJA (2005). *Caenorhabditis elegans* germline patterning requires coordinated development of the somatic gonadal sheath and the germline. **Developmental Biology** 279, 322-335.

Maciejowski J[#], Ahn J, Cipriani PG, **Killian DJ**, Chaudhary AL[#], Lee, JI, Voutev R, Johnsen, RC, Baillie, DL, Gunsalus KC, Fitch DHA, Hubbard EJA (2005). Autosomal genes of autosomal/X-linked duplicated gene pairs and germline proliferation in *C. elegans*. **Genetics** 169, 1997-2011.

Killian DJ and Hubbard EJA (2004). *C. elegans* *pro-1* is required for soma/germline interactions that influence proliferation and differentiation in the germ line. **Development** 131, 1267-1278.

Pepper A S-R, Lo T-W, **Killian DJ**, Hall DH, Hubbard EJA (2003). The establishment of *Caenorhabditis elegans* germline pattern is controlled by overlapping proximal and distal somatic gonad signals. **Developmental Biology** 259, 336-350.

Pepper A S-R, **Killian DJ**, Hubbard EJA (2003). Genetic Analysis of *Caenorhabditis elegans glp-1* Mutants Suggests Receptor Interaction or Competition. **Genetics** 163, 115-132.

Schaeffer V, **Killian D**, Desplan C, Wimmer E (2000). High bicoid levels render the terminal system dispensable for *Drosophila* head development. **Development** 127, 3993-3999.

Mollereau B, Wernet M, Beaufile P, **Killian D**, Pichaud F, Kuhnlein R, Desplan C (2000). A green fluorescent protein enhancer trap screen in *Drosophila* photoreceptor cells. **Mechanisms of Development** 93, 151-160.

TEXTBOOK PUBLICATIONS

Essentials of Genetics, 11th edition
Klug, Palladino, and **Killian** (with contributions by Bernot)
Pearson, San Francisco, CA (forthcoming 2027)

Concepts of Genetics, 13th edition
Klug, Palladino, and **Killian**
Pearson, San Francisco, CA (2026)

Concepts of Genetics, 12th edition; digital update 2021
Klug, Cummings, Spencer, Palladino, and **Killian**
Pearson, San Francisco, CA (2021)

Essentials of Genetics, 10th edition
Klug, Cummings, Spencer, Palladino, and **Killian**
Pearson, San Francisco, CA (2020)

Concepts of Genetics, 12th edition
Klug, Cummings, Spencer, Palladino, and **Killian**
Pearson, San Francisco, CA (2019)

Essentials of Genetics, 9th edition
Klug, Cummings, Spencer, and Palladino (with contributions by **Killian**)
Pearson, San Francisco, CA (2016)

Author - Special Topics in Modern Genetics Chapter 2: Emerging Roles of RNA

Concepts of Genetics, 11th edition
Klug, Cummings, Spencer, and Palladino (with contributions by **Killian**)
Pearson, San Francisco, CA (2015)

Author - Special Topics in Modern Genetics Chapter 2: Emerging Roles of RNA

ABSTRACTS

(# mentored undergraduate students)

Kim M[#], Wells A[#], White, E[#], **Killian DJ** (2024) MBL-1 is a splicing factor required for dendrite patterning in *C. elegans*. The Midstates Consortium for Math and Science (University of Chicago). Poster by Kim.

Wells A[#], Kim M[#], **Killian DJ** (2023) MBL-1 is a splicing factor required for dendrite patterning in *C. elegans*. The Midstates Consortium for Math and Science (Washington University, St Louis, MO). Poster by Wells.

Thumann SC[#], **Killian DJ** (2022) Analyzing the role of the *rbm-39* gene in *C. elegans* neuronal morphology. Rocky Mountain Undergraduate Research Conference (Colorado Christian University) Poster by Thumann.

Musto A[#], Parks G[#], **Killian DJ** (2022). Analysis of multiple alleles reveals the roles of *dpy-19* in *C. elegans* neuroblast migration. Rocky Mountain Undergraduate Research Conference (Colorado Christian University) Talk by Musto.

Doyle P[#], **Killian DJ** (2021) Characterizing the effect of the *rbm-39* gene in *C. elegans* germline development. The Midstates Consortium for Math and Science. Virtual poster by Doyle.

Cheng Y[#], **Killian DJ**, Olesnick EC (2021) Significance of RNA Binding Motif Protein (RBM-39) in developmental processes in *C. elegans*. 23rd International *C. elegans* Conference. Virtual poster by Cheng.

Cheng J[#], Ende P[#], Tobin C[#], Olesnick EC, **Killian DJ** (2019) Investigating the genetic control of nervous system development using genome editing. The Midstates Consortium for Math and Science (Washington University, St Louis, MO). Poster by Cheng.

Olesnick EC, Antonacci S, Popitsch N, Lybecker M, Titus MB, Thornton S, Valdez R, Derkach PG, Marean A, Miller K[#], Mathai SK[#], **Killian DJ** (2018) Shep/SUP-26 is a conserved translational regulator that controls dendrite development in sensory neurons. The Rocky Mountain Regional Neuroscience Group (Anschutz Medical Campus, University of Colorado Denver). Poster by Olesnick and Killian.

Mathai S[#] and **Killian DJ** (2017). Investigating *lpd-2* as a regulator of neuron development in *C. elegans*. The Midstates Consortium for Math and Science (Washington University, St Louis, MO). Poster by Mathai.

Olesnick EC, Valadez R, Antonacci S, Schachtner L, Derkach P, Miller K[#], Marean A, Popitsch N, Lybecker MC, **Killian DJ** (2017). Identifying conserved RNA targets and protein interactors for the RBP Shep/SUP-26 in *Drosophila* and *C. elegans*. Keystone Symposium - RNA processing and Disease. Taos, New Mexico. Poster by Olesnick.

Miller K[#], Kelly K[#], Birkett C[#], Marean A, Antonacci S, Schachtner L, Lybecker M, Olesnick EC, **Killian DJ** (2016) SUP-26 and Shep are conserved RNA-binding proteins that regulate dendrite development. The Midstates Consortium for Math and Science (University of Chicago). Poster by Miller.

Miller K[#], Kelly K[#], Birkett C[#], Marean A, Antonacci S, Schachtner L, Lybecker M, Olesnick EC, **Killian DJ** (2016) SUP-26 and Shep are conserved RNA-binding proteins that regulate dendrite development. The Rocky Mountain Regional Neuroscience Group (Anschutz Medical Campus, University of Colorado Denver). Poster by Miller and Kelly.

Antonacci S, Forand D, Wolf M[#], Tyus C[#], Barney J[#], Kellogg L[#], Simon MA[#], Kerr G[#], Wells KL[#], Younes S, Mortimer NT, Olesnick EC, **Killian DJ** (2015). Identifying a Conserved Set of RNA-Binding Proteins Required for Dendrite Morphogenesis. Society for Developmental Biology 74th Annual Meeting (Snowbird, Utah). Poster by Killian.

Antonacci S, Forand D, Wolf M[#], Tyus C[#], Barney J[#], Kellogg L[#], Simon MA[#], Kerr G[#], Wells KL[#], Younes S, Mortimer NT, Olesnick EC, **Killian DJ** (2015). Identifying a Conserved Set of RNA-Binding Proteins Required for Dendrite Morphogenesis. The Rocky Mountain Regional Neuroscience Group (Anschutz Medical Campus, University of Colorado Denver). Poster by Killian.

Antonacci S, Forand D, Olesnick EC, **Killian DJ** (2014) RNA-binding proteins regulate dendrite morphogenesis in *C. elegans*. The American Society for Cell Biology 2014 Annual Meeting (Philadelphia, PA). Poster by Antonacci.

Tyus C[#], Antonacci S, Olesnick EC, **Killian DJ** (2014) The role of RNA-binding protein SUP-26 in dendrite morphogenesis in *C. elegans*. The Midstates Consortium for Math and Science (University of Chicago). Poster by Tyus.

Forand D, Jones K, Wolf M[#], Antonacci S, Olesnick EC, **Killian DJ** (2014) RNA-binding proteins regulate dendrite morphogenesis in *C. elegans*. The Society for Developmental Biology Southwest Regional Meeting (Anschutz Medical Campus, University of Colorado Denver). Poster by Forand.

Wolf M[#], Tynan T[#], Kellogg L[#], Simon M[#], Forand D, Antonacci S, Olesnick EC, **Killian DJ** (2013) The role of RNA binding proteins in dendrite morphogenesis in *C. elegans*. The American Society for Cell Biology 2013 Annual Meeting (New Orleans, LA). Poster by Wolf.

Tynan T[#], Simon M[#], Wolf M[#], Forand D, Olesnick EC, **Killian DJ** (2013) The role of RNA binding proteins in *C. elegans* dendrite morphogenesis. The Midstates Consortium for Math and Science (Washington University, St Louis, MO). Poster by Tynan.

Wells K[#], **Killian DJ** (2013) A novel mutation in the *daf-19* gene affects ciliated neuron development in *C. elegans*. 10th Annual Colorado Springs Undergraduate Research Forum (University of Colorado at Colorado Springs). Poster 24 by Wells.

Kellogg L[#], Buchwalder M[#], Kerr G[#], Westergard E[#], Olesnick EC, **Killian DJ** (2012) The role of RNA binding proteins in dendrite morphogenesis. The Midstates Consortium for Math and Science (University of Chicago). Poster by Kellogg.

Wells K[#], **Killian DJ** (2012) A novel mutation in the *daf-19* gene affects ciliated neuron development in *C. elegans*. The Midstates Consortium for Math and Science (University of Chicago). Talk by Wells.

Kerr G[#], Olesnick EC, **Killian DJ** (2012) The role of RNA binding proteins in dendritic morphogenesis. 9th Annual Colorado Springs Undergraduate Research Forum (Colorado College). Poster 7 by Kerr.

Meyer J[#], Rowneki M[#], Killian DJ (2011) Genetic mapping and characterization of a mutation that affects male-specific neural development in *C. elegans*. The American Society for Cell Biology 2011 Annual Meeting (Denver, CO). Poster: 1329/B887 by Killian.

Rowneki M[#], Reilly B[#], **Killian DJ** (2011) Genetic mapping and characterization of a mutation that affects male-specific neural development in *C. elegans*. 2011 Mid-Atlantic Society for Developmental Biology Annual Meeting (University of Pennsylvania). Poster: 66 by Rowneki.

Killian DJ, Kaplan G[#], Rowneki M[#] (2010) Characterization and Mapping of Mutants that Affect Sex-specific neurons in *C. elegans*. Society for Developmental Biology 69th Annual Meeting (Albuquerque, NM). Poster: 239 by Killian.

Kim J[#], Gold C[#], **Killian DJ** (2010) The genetic regulation of sex determination in *C. elegans*: *tra-5*. Mentored Undergraduate Summer Experience Banquet (The College of New Jersey). Poster: 18 by Kim.

Killian DJ, Pan N, Kimberly E, Xue D (2005) Analysis of the regulation of sex-specific cell deaths in *C. elegans*. 15th International *C. elegans* Meeting (University of California, Los Angeles). Poster: 743A by Killian.

Voutev RV, **Killian DJ**, Ahnn JH, Hubbard EJA (2005). Pro mutants, germline tumors, sheath cells, and ribosome biogenesis. 15th International *C. elegans* Meeting (University of California, Los Angeles). Talk: 170 by Voutev.

Killian DJ and Hubbard EJA (2004). Robust germline amplification and the precise timing of initial meiosis are dependent upon interactions with specific cells of the developing gonadal sheath. East Coast Worm Meeting (Yale Univ.). Talk: 3 by Killian.

Killian DJ, Ahn JH, Voutev RV, Hubbard EJA (2004). Proliferation, Differentiation, and Tumor Formation: Roles of the Developing Gonadal Sheath in Patterning the *C. elegans* Germ Line. "Germ Cells" Cold Spring Harbor Labs Meetings. Talk by Hubbard.

Killian DJ, Maciejowski J[#], Chaudhary A[#], Hubbard EJA (2003). *nog* Mutants and Early Germline Proliferation in *C. elegans*. 14th International *C. elegans* Meeting (University of California, Los Angeles). Poster: 1049 by Killian.

Killian DJ and Hubbard EJA (2003). A Somatic Requirement for PRO-1 in Germline Development. 14th International *C. elegans* Meeting (University of California, Los Angeles). Poster: 1065 by Killian.
Outstanding Poster Award

Pepper ASR, **Killian DJ**, Lo TW, Hubbard EJA (2002). Temporal and spatial control of initial meiotic entry in the *C. elegans* germ line. East Coast Worm Meeting (University of New Hampshire). Talk: 20 by Pepper.

Killian DJ, Chaudhary A[#], Culliford D, Hubbard EJA (2002). Regulation of Early Germline Proliferation in *C. elegans*. East Coast Worm Meeting (University of New Hampshire). Poster: 148 by Killian.

Killian DJ and Hubbard EJA (2002). RNAi feeding to produce males. *Worm Breeder's Gazette* 17: 32.

Killian DJ, Vora T[#], Hubbard EJA (2001). Forward and Reverse Genetic Approaches to Identify Genes Involved in Initial Meiotic Entry. 13th International *C. elegans* Meeting (University of California, Los Angeles). Poster: 992 by Killian.

INVITED SEMINARS

Pearson—Higher Education Events

Killian DJ (April 23, 2025). Conceptual Learning in Genetics. [Webinar](#).

University of Denver, Department of Biological Sciences

Killian DJ (May, 2015). RNA-binding proteins that regulate dendrite development in *C. elegans*

Biofrontiers Center, University of Colorado at Colorado Springs

Killian DJ and Olesnicky EC (March, 2015). Identifying a conserved toolkit of RNA-binding proteins that regulate dendrite development.

The United States Air Force Academy, Department of Biology Seminar Series

Killian DJ and Olesnicky EC (March, 2014). The Role of RNA-binding Proteins in Dendrite Morphogenesis.

Colorado College, Mrachek Fellowship Dinner. Venue: Stewart House

Killian DJ (May, 2013). The Role of RNA-binding Proteins in Dendrite Morphogenesis.

Colorado College, Natural Sciences Colloquium Series

Killian DJ and Olesnicky EC (April, 2012). The Role of RNA-binding Proteins in Dendrite Morphogenesis.

Colorado College, Biology Department

Killian DJ (November, 2010). A genomic approach to identifying cell cycle regulators in *Caenorhabditis elegans*.

The College of New Jersey, Department of Biology

Killian DJ (October, 2008). Death is the Difference: Sex-determination and sex-specific cell death in *C. elegans*.

Colorado College, Biology Department

Killian DJ (April, 2008). *tra-5*, a novel gene, regulates *her-1* to promote hermaphrodite development in *C. elegans*.

***C. elegans* Frontrange Supergroup. Venue: University of Colorado at Boulder**

Killian DJ (October, 2007). *tra-5*, a novel gene, regulates *her-1* to promote hermaphrodite development in *C. elegans*.

***C. elegans* Frontrange Supergroup. Venue: University of Colorado at Boulder**

Killian DJ (September, 2006). *tra-5(sm146)* affects sex-specific cell death in *C. elegans*.

***C. elegans* Frontrange Supergroup. Venue: University of Colorado at Boulder**

Killian DJ (March, 2006). SCF^{SEL-10} regulation of sexually dimorphic apoptosis in *C. elegans*.

Signaling and Cellular Regulation Supergroup. Venue: University of Colorado at Boulder

Killian DJ (November, 2005). The regulation of sexually dimorphic apoptosis in *C. elegans*.

University of Colorado at Boulder, Dept of Molecular, Cellular, & Developmental Biology Retreat.

Venue: Breckenridge, Colorado. Killian DJ and Xue D (October 2005). The regulation of sexually dimorphic apoptosis in *C. elegans*.

Mateyko Award Talk: New York University, Department of Biology

Killian DJ (May, 2005). The Regulation of Sex-Specific Cell Death in *C. elegans*.

***C. elegans* Frontrange Supergroup. Venue: University of Colorado at Boulder**

Killian DJ (November, 2004). Proliferation, differentiation, and tumor formation: roles of the developing gonadal sheath in patterning the *C. elegans* germ line.

The University of Colorado Health Science Center, Department of Cell and Developmental Biology

Host: Dr. Tom Evans

Killian DJ (March, 2004). *pro-1* is required for soma/germline interactions that influence proliferation and differentiation in the germ line of *C. elegans*.

University of Colorado at Boulder, Department of Molecular, Cellular, and Developmental Biology

Host: Dr. Ding Xue

Killian DJ (March, 2004). *pro-1* is required for soma/germline interactions that influence proliferation and differentiation in the germ line of *C. elegans*.

University of Wyoming, Department of Molecular Biology

Host: Dr. David Fay

Killian DJ (March, 2004). *pro-1* is required for soma/germline interactions that influence proliferation and differentiation in the germ line of *C. elegans*.

University of California, Santa Cruz, Department of Molecular Cell and Developmental Biology

Host: Dr. Andrew Chisholm

Killian DJ (March, 2004). *pro-1* is required for soma/germline interactions that influence proliferation and differentiation in the germ line of *C. elegans*.

Pre-doctoral Colloquium, New York University, Department of Biology

Killian DJ (October, 2003). *pro-1* is required for soma/germline interactions that influence proliferation and differentiation in the germ line of *C. elegans*.

New York University, Developmental Genetics Symposium.

Venue: New York University School of Medicine, Skirball Institute of Biomedical Medicine

Killian DJ and Hubbard EJA (June, 2003). *pro-1* is required for gonadogenesis and soma-to-germline interactions that pattern initial meiosis.

New York Area Worm Meeting. Venue: The Rockefeller University

Killian DJ and Hubbard EJA (April, 2003). A somatic requirement for *pro-1* in germline development of *C. elegans*.

Pre-doctoral Colloquium, New York University, Department of Biology

Killian DJ (March, 2002). Regulation of Germline Proliferation and Differentiation in *C. elegans*.

Pre-doctoral Colloquium, New York University, Department of Biology

Killian DJ (April, 2001). Forward and Reverse Genetic Approaches to Identify Genes Involved in Early Germline Development.

EXTERNALLY FUNDED GRANTS

Natural Science Foundation, Research Grant, Integrative Organismal Systems (2013 - 2017)

Collaborative Research: RUI: The role of RNA-binding proteins in *C. elegans* dendrite morphogenesis - \$374,725 (and \$302,366 to Co-PI Eugenia Olesnický at University of Colorado, Colorado Springs)

National Science Foundation, Major Research Instrumentation Award (2011 - 2013)

Acquisition of a Fluorescence Stereomicroscope to Enhance Undergraduate Research at Colorado College - \$59,487 was awarded to purchase a microscope for teaching and research purposes.

Society for Developmental Biology, Teaching Faculty Travel Grant (August, 2010)

Awarded \$600 for travel to the conference.

National Institutes of Health, Ruth L. Kirschstein National Research Service Award (2005 – 2008)

Regulation of sex-specific cell death in *C. elegans* – Postdoctoral fellowship - \$143,200

National Institutes of Health Training Grant in Developmental Biology (2001 – 2003)

Granted to NYU Developmental Genetics Program - supported my graduate student stipend for 2 years.

INTERNALLY FUNDED GRANTS AND AWARDS

Faculty-Student Collaborative Research Grant, Colorado College (2026)

Student summer stipend - \$4800; research funds - \$500

Dille Fund, Colorado College (2026)

Student summer stipend \$2400

Natural Sciences Division Research and Development Grant, Colorado College (2026)

SUP-26 regulation of the cytoskeleton in neurons - \$5850

Faculty-Student Collaborative Research Grant, Colorado College (2025)

Student summer stipend - \$4800; research funds - \$500

Natural Sciences Division Research and Development Grant, Colorado College (2025)

Identification of mRNA targets of MBL-1 in *C. elegans* neurons - \$5200

Dille Fund, Colorado College (2025)

Student summer stipend \$1200

Faculty-Student Collaborative Research Grant, Colorado College (2024)

Student summer stipend - \$4800; research funds - \$500

Natural Sciences Division Research and Development Grant, Colorado College (2024)

The role of MBL-1 in axon versus dendrite specification in C. elegans - \$6240

Faculty-Student Collaborative Research Grant, Colorado College (2023)

Student summer stipend - \$4000; research funds - \$500

Natural Sciences Division Research and Development Grant, Colorado College (2023)

The role of MBL-1 in nervous system development in *C. elegans* - \$5000

Faculty-Student Collaborative Research Grant, Colorado College (2022)

Student summer stipend - \$4000; research funds - \$500

Natural Sciences Division Research and Development Grant, Colorado College (2022)

The Molecular Role of RBM-39 in RNA Splicing in *C. elegans* - \$5000

Natural Sciences Division Research and Development Grant, Colorado College (2021)

The molecular role of RBM-39 in RNA splicing - \$5000

Faculty-Student Collaborative Research Grant, Colorado College (2021)

Student summer stipend - \$4000; research funds - \$500

Faculty-Student Collaborative Research Grant, Colorado College (2020)

Student summer stipend - \$4000; research funds - \$500

Natural Sciences Division Research and Development Grant, Colorado College (2020)
Investigation of the roles of *rbm-39* in the developing nervous system in *C. elegans* - \$5000

Natural Sciences Division Research and Development Grant, Colorado College (2019)
The role of RBM-39 in nervous system and germline development- \$5000 (not used due to COVID-19)

Faculty-Student Collaborative Research Grant, Colorado College (2019)
Student summer stipend - \$4000; research funds - \$500 (not used due to COVID-19)

Faculty-Student Collaborative Research Grant, Colorado College (2018)
Student summer stipend - \$4000; research funds - \$500

Natural Sciences Division Research and Development Grant, Colorado College (2018)
The genes *nos-1*, *nos-2*, and *nos-3* play redundant roles in *C. elegans* dendrite development- \$5000

Natural Sciences Division Research and Development Grant, Colorado College (2017)
Investigating the role of Neuroguidin in neuron development in *C. elegans* - \$5000

Faculty-Student Collaborative Research Grant, Colorado College (2017)
Student summer stipend - \$4000; research funds - \$500

Natural Sciences Division Research and Development Grant, Colorado College (2016)
Determination of the targets of RNA-binding proteins in neuron development - \$5000

Faculty-Student Collaborative Research Grant, Colorado College (2016)
Student summer stipend - \$4000; research funds - \$500

Curriculum Development Grant, Colorado College (2015)
Development and optimization of a new lab course for the new Molecular Biology major - \$4000

Faculty-Student Collaborative Research Grant, Colorado College (2015)
Student summer stipend - \$4000; research funds - \$500

Natural Sciences Division Research and Development Grant, Colorado College (2015)
Investigating the mechanisms by which RNA-binding proteins regulate dendrite development - \$5000

SEGway Seed Grant, Colorado College (2014)
Determining the protein composition of RNA/protein complexes that regulate dendrite development - \$5000

Natural Sciences Division Research and Development Grant, Colorado College (2014)
Analysis of gene expression and subcellular localization of RBPs that influence dendrite development - \$5000

Natural Sciences Division Research and Development Grant, Colorado College (2013)
The Role of DAF-19 in the specialization of male-specific ciliated neurons in *C. elegans*- \$5000

Mrachek Fellowship, Colorado College (2012-2013)
The role of RNA-binding Proteins in Dendrite Morphogenesis in *C. elegans* - \$4000

Faculty-Student Collaborative Research Grant, Colorado College (2012)
Student summer stipend - \$2500; research funds - \$500

Natural Sciences Division Research and Development Grant, Colorado College (2012)
The Genetic Characterization of a Mutation that Affects Sex-Specific Development in *C. elegans*
- \$4,101.43

Mentored Undergraduate Summer Experience, The College of New Jersey (Summer 2010)

Support for two undergraduates (\$2500), and \$1000 faculty stipend

Support of Scholarly Activity Award, The College of New Jersey (Fall 2010 – Spring 2012)
One course release for research

Career Development Award, The College of New Jersey Federation of Teachers, AFL Local (2009)
Supported travel to a professional development conference, CUR Institutes

Gladys Mateyko Award for Excellence in Biology, New York University (2004)
Award of \$500

Kopac Graduate Fellowship in Biology, New York University (2003)
Support for graduate student stipend

TEXTBOOK REVIEWER

Griffiths, Wessler, Carroll, and Doebley (2013) *Introduction to Genetic Analysis*, 11th edition, WH Freeman and Company Publishing, New York, NY.
Reviewed Chapters 9 and 13.

Latchman (2012) *Gene Control*, 2nd edition, Garland Science, New York, NY and Abingdon, UK.
Reviewed a proposal for the 2nd edition.

Klug, Cummings, Spencer, and Palladino (2011) *Concepts of Genetics*, 10th edition, Benjamin Cummings-Pearson Education, San Francisco, CA.
Accuracy Checker (Chapters 4 - 26) and Chapter Reviewer (Chapters 20, 21, and 22)

MENTORING EXPERIENCE

Independent Research Mentor/Senior Thesis Mentor - Colorado College

Research done in the Killian Lab (* indicates senior thesis; ^ indicates co-author; # indicates high school student):

Estefanía Izarnotegui Cerda (2026)	Julianna Geronazzo (2023)
Mica Hart (2026)	Brayden Legette (2023–2024)
Marina Seidl (2026)	Annabelle Swenson (2023)
Sophia Russo (2026)	Megan Bass (2023)
Noa Mor (2026)	Aidan Wells (2023)*
Jill Coleman (2026)	Willie Shea (2023)
Lucio Bollettieri (2025)*	Noah Johnson (2022)
Audrey Combs (2025)*	Adele Matter (2022–2023)
Lilia Akinchina (2025)	Ethan Grant (2021–2023)
Brady Smith (2025)#	Knowlton Beck (2021–2023)
Mikenna Grotto (2025)	Cade Thumann (2021–2022)*
Talyn Snow (2025)	Ana Musto (2021–2022)*
Meena Kim (2023–2025)*	Duffy Doyle (2021–2022)*
Nick Bradley (2024)	Daniela Gonzalez (2021)
Sadie Fleig (2024)	Grace Rosner (2021)
Ronan McCann (2024)	Delaney McCann (2021)
Liz White (2023–2024)	Patrick Ende (2019–2020)*

Gus Parks (2019–2020)*
Judy Cheng (2019–2021)*
Peter Lehman (2019)
Lauren Pejza (2019)
Mac Millard (2018)
Madison Alexander (2017)
Claire Tobin (2017–2019)
Madeline Chrupcala (2017)
Paul Fuchs (2017)
Samuel Mathai (2017–2018)^
Nora Langer (2017)
Garrett Manion (2016–2018)
Ria Paradkar (2017)#
Annie Brewster (2016–2017)
Terrell Blei (2016–2017)
Katie Miller (2013–2017)*^
Julia Barney (2013–2016)*^
Kiersten Kelly (2015–2016)
Courtney Birkett (2015)

Natasha Riveron (2014–2015)
Alec Sheffield (2014–2015)
Courtney Tyus (2014–2015)*^
Margaret Wolf (2013–2015)*^^
Shakela Mitchell (2013–2014)
Wade Banta (2013)
Maria Buckmiller-Mulligan (2013)
Margo Simon (2013)^
Kristen Wells (2012–2014)*^^
Leah Kellogg (2012–2013)*^
Maxwell Buchwalder (2012)
Cierra Walker (2012–2013)
Blair Denman (2013)
Hannah Wellman (2013)
Tim Tynan (2013)
Genevieve Kerr (2011–2012)*^
Emily Westergard (2011–2012)
Jessica Meyer (2011)

Primary Reader for Senior Thesis - Colorado College

Liz White, (2026, research done at Leiden University, Netherlands)
Luke Sadhwani (2025, research done at Cedars-Sinai Medical Center)
Delaney McCann (2022, research done at Adimab, LLC)
Claire Tobin (2021, research done at Mount Desert Island Biological Laboratory)
Jordan Rudman (2017, research done at UMC Utrecht)
Freda Kreier (2017, research done at North Carolina State University)
John Dugas (2017, research done at University of Minnesota)
Brianna Silver (2016, research done at University of Indiana – Bloomington)
Felix Braun (2015, research done at University of Wisconsin – Madison)
Jed Doane (2014, research done at Huntsman Cancer Institute)
Wade Banta (2014, research done at CSU Biochemistry)
Mitch Sungelo (2014, research done at CU Denver Anschutz Medical Center)
Hannah Wellman (2013, research done at Huntsman Cancer Institute)

Second Reader for Senior Thesis - Colorado College

Vanessa Perez (2026, research done in the Liu Lab at the Broad Institute)
Mingyuan Xu (2025, research done in the Lostroh lab at CC)
Sarah Cloninger (2025, research done in the Maloney lab at CC)
Jasmine Volkaert (2024, research done in Lostroh lab at CC)
Tia Peterson (2024, research done in Course lab at CC)
Imali Kegode (2021, research done at Steadman Clinic, Vail, CO)
Cody Leong (2020, research done in Hanson lab at CC)
Lucia Costanza (2020, research done in Garcia lab at CC)
Madeline Alexander (2020, research done in Hatton lab at CC)
Madeline Stesney (2020, research done in Hatton lab at CC)
Jenny Yoo (2019, research done at University of Colorado – Anschutz)

David Eik (2019, research done in Hanson lab at CC)
Kate Matlin (2019, research done in Hanson lab at CC)
Madeline Chrupcala (2019, research done at University of Colorado – Anschutz)
Robert Roth (2018, research done in Garcia lab at CC)
Caroline Boyd (2017, research done in Lostroh and Lang labs at CC)
Sally Zimmermann (2017, research done in Lostroh lab at CC)
Hana Wasserman (2016, research done at University of California, Los Angeles)
Abigail Kumagai (2016, research done at Trudeau Institute, Saranac Lake, NY)
Roy Dornbrook (2015, research done at Harvard University)
Jake Hoffman (2014, research done in Emilie Gray's lab at CC)
Kayla Warfield (2014, research done at Oregon Health Science Center)
Adam Lombroso (2013, research done in Nancy Huang's lab at CC)
Senani Mamba (2013, research done at Scripps Research Institute, Florida)

Secondary Advisor for Master of Science in Biology Thesis

Adeline Chang, MS, 2021, Olesnick lab, University of Colorado – Colorado Springs
Daniel Forand, MS, 2015, Olesnick lab, University of Colorado – Colorado Springs
Kande Jones, MS, 2015, Olesnick lab, University of Colorado – Colorado Springs

Gateway to Graduate School: Faculty-Student Collaboration in Environmental & Organismal Biology (Fall 2010 – Spring 2011)

The College of New Jersey
Funded by The National Science Foundation, American Recovery and Reinvestment Act

PERSIST (Program to Enhance Retention of Students in Science Trajectories in Biology and Chemistry) (Fall 2010 – Spring 2011)

The College of New Jersey
Funded by The National Science Foundation, American Recovery and Reinvestment Act

Mentored Undergraduate Summer Experience (Summer 2010) – 2 students

The College of New Jersey

Independent Research Mentor (2009 – 2011) – 7 students

The College of New Jersey

Undergraduate Research Opportunities Program Mentor (2005 – 2008) – 2 students

University of Colorado at Boulder, MCD Biology

Undergraduate Research Mentor (2003 – 2004) – 3 students

New York University, Department of Biology

HHMI Summer Research Program Mentor (2002) – 1 high school student

New York University, Department of Biology and Howard Hughes Medical Institute

PROFESSIONAL MEMBERSHIPS

American Society for Cell Biology
Genetics Society of America
Society for Developmental Biology
Council on Undergraduate Research

Beta Beta Beta National Biological Honor Society, Graduate Member

ACADEMIC SERVICE

Academic Events Committee (2025 – 2026)

Chair of Department of Molecular Biology (2017 – 2018; 2021 – 2025)

Project 2024 Steering Committee; Faculty Representative (2021 – 2024)

Natural Science Executive Committee and Committee on Instruction Representative (2019 – 2020)

STEM@CC Task Force (2019)

Rhodes Scholars Applicant Advisory Committee, Colorado College (2017 – present)

Selected candidates to nominate for Rhodes Scholarship and conducted mock interviews.

SEGway Grants Review Committee, Colorado College (Spring 2017 – Fall 2018)

Health Professions Advisory Committee, Chair, Colorado College (Spring 2015 – Spring 2017)

Human Biology and Kinesiology Curriculum Advisor, Colorado College (Spring 2015)

Neuroscience Program, Neuroscience Advisor, Colorado College (2012 – present)

Institutional Biosafety Committee, University of Colorado at Colorado Springs (2012 – 2020)

Faculty Advisor to the NIH-Oxford/Cambridge Scholars Program, Colorado College (2012 – 2015)

Canvas Operations Group, Colorado College (2014)

This group steers many of the decision-making items from how the Canvas (learning management system replacement for PROWL) grade book should be configured, the look and feel of Canvas, how classes are auto-created, etc.

Margaret T. Barnes Scholarship Selection Team (2014; 2017; 2019; 2020; 2023; 2024; 2025)

Read and evaluated applications for the Barnes Scholarship in Biology and recommended four for consideration by the Natural Sciences Executive Committee.

Design Review Board, Colorado College (Fall 2014)

Campus Master Plan Action Team, Colorado College (2013 – 2014)

Webb-Waring Biomedical Research Award Committee (April, 2014)

One of 5 senior scientists who evaluated internal proposals from Colorado College for this award.

Minority Concerns Committee Representative for Inorganic Chemist Search in the Chemistry and Biochemistry Department at Colorado College (2013-2014 academic year)

Boettcher Scholarship Events at Colorado College (March 3-4, 2013)

Attended a dinner for scholarship finalists and parents to promote CC and gave a mock lecture to parents to provide a sense of what a CC class looks and feels like.

Learning Commons Committee, Colorado College (2012 – 2013)

Co-coordinator of Biology Department Seminar Series, Colorado College (2011 – 2013)

Writer and Reviewer of questions for the Graduate Record Examination (GRE) Biochemistry, Cell, and Molecular Biology Exam for the Educational Testing Service (2011 – 2012)

The College of New Jersey

Medical Careers Advisory Committee (2010 – 2011)

The College of New Jersey, Department of Biology
Ad-hoc Program Review Committee (2010 – 2011)
Facilities and Physical Plant Coordinator for Department of Biology (2010 – 2011)
Ad-hoc Lab Safety Committee (2010 – 2011)
Curriculum Committee (2009 – 2011)
Assessment Committee (2009 – 2011)

CONTINUING EDUCATION

Alan Alda Center for Communicating Science, Alda Science Communication Experience (virtual workshop, May 6, 2021).

Council on Undergraduate Research Institute: Beginning a Research Program in the Natural Sciences at a Predominantly Undergraduate Institution (Calvin College, November 20-22, 2009)

Teaching and Learning in Undergraduate Science Courses, MCDB5650 (Spring 2008)
University of Colorado, MCD Biology - Instructors: Bill Wood and Jenny Knight