CURRICULUM VITAE

David Milton Miller, III, Ph.D.

Personal Information	Business Address	Home Address
U.S. Citizen Spouse. Nancy Lee, RN, MBA Children: Megan, Erin	Dept. of Cell & Developmental Biology Vanderbilt University PMB 407935 Rm 3120, MRB III 465 21st Ave South Nashville, TN 37240-7935 Office: (615) 343-3447 Lab: (615 343-3448 david.miller@vanderbilt.edu	895 Thompson Avenue Nashville, TN 37204 (615) 333-2942 (615) 337-0832 (cell)

PROFESSIONAL EXPERIENCE

2005-Present	**Professor** of Cell and Developmental Biology and Biological Sciences, Vanderbilt University. Developmental neurobiology, synaptic specificity and remodeling, dendrite morphogenesis, genome biology.
1994-2005	**Associate Professor**, Dept. of Cell & Developmental Biology, Vanderbilt University, Development and function of the *C. elegans* motor neuron circuit.
1990-1994	**Research Assistant Professor**, Dept. of Cell Biology, Duke University. Molecular genetics of neural specificity in *C. elegans*.
1984-1990	**Assistant Professor**, Dept. of Zoology, North Carolina State University. Molecular genetics of neural specificity in *C. elegans*.
1983-1985	**Visiting Scientist**, MRC Laboratory of Molecular Biology, Cambridge. UK. Advisor: Dr. Sydney Brenner. Structure and expression of *C. elegans* myosin heavy chain genes.
1980-1983	**Postdoctoral Fellow**, Baylor College of Medicine, Houston, TX. Advisor: Dr. Henry F. Epstein. Immunological and genetic analysis of nematode muscle assembly.
1973-1980	**Graduate Student.** Rice University. Advisor: Dr. Florante Quiocho. Structure and function of bacterial transport and chemotaxis receptors.

EDUCATION

1981	Rice University, Houston, TX. Dept. of Biochemistry, Ph.D.
1973	University of Southern Mississippi, Hattiesburg, MS. Bachelor of Science in Biology.

GRANTS

Current

2023-2028	NIH (NINDS) R01 NS100547	$270,755/yr (DC, Miller)
	Discovery and analysis of the C. elegans neuronal gene expression map and network (CeNGEN).	
	PI, Hammarlund, Hobert, Krishnaswamy, Miller	
2020-2025	NIH (NINDS) R01 NS113559	$235,000/yr (DC)
	Molecular mechanisms for neuron-specific assembly of electrical synapses.	
	PI, Miller	
2018-2024	NIH (NINDS) R01 NS106951	$206,429 (DC)
	Molecular Genetics of Synaptic Plasticity.	NCE
	PI, Miller, Co-PIs, Richmond, Bianchi	

Past

2017-2022 NIH (NINDS) R01 NS100547.
Discovery and analysis of the C. elegans neuronal gene expression map and network (CeNGEN).
PI, Hammarlund, Hobert, Miller, Sestan $237,037/yr (DC, Miller)

2019-2021 NIH (NINDS) R21 NS108505.
Identification of the transcriptional targets of three conserved regulatory factors necessary for motor neuron subtype function.
PI, Kratsios, Univ. of Chicago $75,000/yr (DC, Miller)

2020-2021 NIH (NINDS) R01 NS118078
Molecular mechanisms of motor neuron terminal identity
PI, Kratsios, Univ. of Chicago $49,000 (DC, Miller)

2018-2019 Vanderbilt Center for Single Cell Biology.
Identifying neuron-specific determinants of synaptic connectivity by single-cell RNA-Seq.
Miller (PI)

2017-2019 NIH (NINDS) R21-NS100483. *The role of ETR-1/CELF1, an RNA binding protein, in Neuronal Migration.*
PI, E. Lundquist, Univ. of Kansas.

2013-2018 NIH (NINDS) R01 NS079611. *Molecular regulation of dendrite morphogenesis.*
Miller (PI)

2013-2018 NIH (NINDS) R01 NS081259. *Molecular determinants of synaptic plasticity.*
Miller (PI)

2016-2017 NIH (NIA) R56 AG050969. *Mechanisms and Regulation of Neuronal Aging.*
(PI, M. Hammarlund, Yale).

2013-2015 NIH (NINDS) R21 NS08266. *Identification of transcriptional targets of the DLK-1 axon regeneration pathway.* Hammarlund (Yale) & Miller (Co-PI)

2007-2012 NIH (NHGRI) U01 HG004263 *Global Identification of transcribed elements in the C. elegans genome.* (PI, R.W. Waterston), Miller, U01 project leader.

2010-2012 Vanderbilt IDEAS Program. *A genetic screen in C. elegans to identify the in vivo target of the potent Wnt inhibitor, pyrvinium.*

2009-2011 NIH (NINDS) R21 NS66882 *Identification of transcriptional determinants of dendritic patterning.*

2010-2011 NIH (NIMH) P50 MH78028 (PI, R. Blakely). Conte Center for Neuroscience Research, Pilot Project. *Gene expression profiles of C. elegans serotonergic neurons*.

2006-2010 US-Israel Binational Science Foundation (BSF) *Genetic Approaches to Nociceptor Function* (Co-Investigator with PI, M. Treinin, Jerusalem)

2006-2008 NIH R21 MH077302*. Identification of Synaptic Remodeling Genes in C. elegans*.

2005-2006 Nicholas Hobbs and Marino Discovery Grant, Vanderbilt Kennedy Center
A novel strategy to identify ARX target genes with key roles in brain development.

2004-2005 NIH/NINDS. Administrative Supplement for DNA Microarray Analysis.

2004-2006 O'Brien Pediatric Nephrology Center Pilot Project (NIH Center Grant). *Gene expression profiling of the C. elegans excretory cell*.

2000-2005 NIH P01 DK58212. *Function of nACh Receptors in C. elegans motor neurons.*
PPG Project leader.

2001-2003 NIH R21, Co-investigator, *Innovative Use of Non-Mammalian Organisms to Study Membrane Transport,* R21 DK60829

2001-2002 NIH NCRR Shared Instrumentation Grant (Confocal Microscope) S10 RR1568

1997-1999 NIH R03. *Novel Methods for Visualizing Neuron-Specific Synapses,* MH58268

2008-2013 NIH R01, *Molecular Genetics of Neural Specificity,* NS26115

2002-2007 NIH R01, *Molecular Genetics of Neural Specificity*, NS26115

1997-2002 NIH R01, *Molecular Genetics of Neural Specificity*, NS26115

1993-1997 NIH R01, *Molecular Genetics of Neural Specificity*, NS26115
1988-1993 NIH FIRST, *Molecular Genetics of Neural Specificity*, R29 NS26115

1987-1988 Biotechnology Development Award. North Carolina Biotechnology Center
1986-1988 Muscular Dystrophy Association Research Grant
1986-1987 Biotechnology Development Award. North Carolina Biotechnology Center

AWARDS AND HONORS

1973 Phi Kappa Phi, University of Southern Mississippi
1973 Outstanding Student in Biochemistry Award, University of Southern Mississippi
1973 Graduation with Honors, University of Southern Mississippi.
1973-1977 Robert Welch Foundation Fellow, Rice University
1980-1982 Muscular Dystrophy Association Postdoctoral Fellow
1984 EMBO Long Term Fellowship
1983,1985 Burroughs Wellcome Fund Travel Grant
2012 Elaine Sanders-Bush Award for Excellence in Teaching, Vanderbilt Univ Medical Center
2013 Fellow of the American Association for the Advancement of Science (AAAS)
2015 Outstanding Mentor for 2015, Neuroscience Graduate Program, Vanderbilt University

PREDOCTORAL FELLOWSHIP AWARDS (Graduate students in Miller lab)

2023-2026 NIH F31NS134292. Casey Gailey
2019-2021 AHA 19PRE34380582. Sierra Palumbos
2018-2020 AHA 18PRE33960581. Andrea Cuentas-Condori
2016-2019 NSF Predoctoral Fellowship. Sierra Palumbos
2014-2016 NIH F31 NS084732. Tyne Miller-Fleming
2011-2013 NIH F31 NS071801. Cody Smith
2012-2013 AHA 12PRE11650022. Mallory Hacker
2010-2012 AHA 10PRE4230025. Mallory Hacker
2010-2012 NIH F31 NS66597. Rachel Skelton
2009-2011 NIH F31 NS63669. Sarah Petersen
2004-2007 NIH F31 NS49743. Joseph Watson
2004-2007 NIH F31 NS46923. Rebecca Fox
2002-2005 NIH F31 NS43058. Steve Von Stetina
1998-2001 NIH F31 MH12260. Kim Lickteig
1997-2000 NIH F31 MH11831. Angela Winnier

POSTDOCTORAL FELLOWSHIP AWARDS (Miller lab)

2018-2021 Vanderbilt Academic Pathways. Jamie Stern, Ph.D.
2021-2023 NIH F32 Kirschstein Postdoctoral NRSA. Tyler Kennedy, Ph.D.

TEACHING EXPERIENCE

MILLER LABORATORY:

Graduates of Miller lab (Vanderbilt University)

James Y.-J. Meir. Ph.D., 1999. UNC-37, a Groucho-like transcription factor, interacts with UNC-4 to govern motor neuron identity in *Caenorhabditis elegans*.
Current Position: Assistant Professor, Department of Life Science, Chang Gung University Taiwan

Angela F. R. Winnier, Ph.D., 2000. Genetic and functional analyses of the neural specificity gene, *unc-4*, in *Caenorhabditis elegans*.
Current Position: Medical Writing Therapeutic Area Lead- Rare Disease, Pfizer.

Kim M. Lickteig. Ph.D., 2000. Genetic control of cholinergic motor neuron differentiation in *Caenorhabditis elegans*.
Current Position: Associate Director, Global Regulatory Affairs, Takeda Pharmaceuticals

Jennifer M. (Ross) Wolff. MS, 1999. Repression of motor-neuron-specific traits by the homeoproteins UNC-4 and VAB-7 specifies motor neuron fate.
Current Position: Professor, Carleton College.

Stephen E. Von Stetina. Ph.D. 2005 Genomic strategies reveal a transcriptional cascade the controls synaptic specificity in *Caenorhabditis elegans*.
Current Position: Biological Research Scientist in Sculpting Evolution Group, MIT Media Lab

Rebecca M. Fox. 2006. Expression profiling reveals key regulators of synaptic specificity and function in the *C. elegans* motor circuit.
Current Position: Variant Curator, GeneDx

Joseph D. Watson. 2007. Gene expression profiles of the C. elegans nervous system reveals targets of the synaptic protein, RPM-1.
Current Postion: Clinical Research Scientist, Rho, Chapel Hill, NC

Laurie R. Earls. 2007. RNAi studies in *Caenorhabditis elegans* reveal that Coenzyme Q protects GABA neurons from apoptotic, calcium-dependent degeneration.
Current Position: Assistant Professor, Cell and Molecular Biology, Tulane University.

Judsen Schneider. 2009. *unc-4* controls synaptic specificity by modulating antagonistic Wnt pathways in the *C. elegans* motor circuit.
Current Position: Chief Technology Officer, Nashville Biosciences, Nashville, TN

W. Clay Spencer. 2011. Global transcriptome profiling of single cells reveals key molecules involved in cellular function and development in *C. elegans*.
Current Position: Postdoctoral Fellow, Evan Deneris, Case West. Reserve, Cleveland, OH.

Sarah Petersen. 2011. A transcriptional program remodels GABAergic synapses in *C. elegans*.
Current Position: Associate Professor, Department of Neuroscience, Kenyon College.

Rachel Skelton. 2012. Molecular analysis of *unc-4* pathway genes that regulate synaptic choice.
Current Position: Senior Director at Leica Biosystems, Boston, MA.

Cody Smith. 2012. Morphological and molecular characterization of somatosensory neurogenesis.
Current Position: Associate Professor, Department of Biological Sciences, University of Notre Dame.

Mallory Hacker. 2013. Investigating the mechanism of GABA neuron degeneration in a model of coenzyme Q deficiency.
Current Position: Assistant Professor, Dept. of Neurology, Vanderbilt University School of Medicine, Nashville, TN.

Tyne Miller-Fleming. 2016. Molecular dissection of synaptic remodeling in GABAergic neurons.
Current Position: Research Instructor, Genetic Medicine, Vanderbilt University School of Medicine, Nashville, TN.

Barbara O'Brien. (2017). Transcriptional regulation of dendrite development in sensory neurons.
Current Position: Houston, Tx

Siwei He (2018) Spatial and temporal regulation of synaptic plasticity in the *C. elegans* motor circuit.
Current Position: Project Leader, Boston Consulting Group, Atlanta, GA

Andrea Cuentas-Condori (2021) Cellular and molecular determinants of synaptic remodeling.
Current Position: Postdoctoral Fellow with D. Colon-Ramos, Yale University.

Sierra Palumbos (2021). Molecular determinants of electrical synapse specificity.
Current Position: Postdoctoral Fellow with Erika Holzbauer, Univ. of Pennsylvannia

Current Graduate Students

Casey Gailey	Cell and Developmental Biology

Current Postdoctoral Fellows

Tyler Kennedy	2019	PhD	Vanderbilt University

Former Postdoctoral Fellows	**Current Position**
Karen Deal. M.D., Ph.D. 2000-01	Senior Research Specialist, Vanderbilt Univ. Med. Ctr
Maureen McDonnell, Ph.D. 2000-02	JD, Regulatory Affairs Specialist, Cardiovascular Systems, St. Paul, MI
Susan Barlow, Ph.D. 2003-05	Associate Professor, University of Lynchburg
Julie Koh, Ph.D. 2002-2005	Associate Director, Institutional Giving, Broad Institute, Boston, MA
Stephen Von Stetina. 2005-2007	Research Scientist, Sculpting Evolution Group, MIT
Joseph D. Watson. 2007-2008	Integrated Product Develop. Assoc., Rho,Chapel Hill, NC
Judsen Schneider. 2010	CTO, Nashville Biosciences, Nashville, TN
Dan Bermingham. 2016	Senior Scientist, Alector, San Francisco, CA
Lakshmi Sundararajan. 2014-2019	Senior Project Manager, Astellas Gene Therapies, San Francisco, CA
Jamie Stern. 2018-2021	Applications Scientist, Agilent Technologies, Atlanta, GA
Seth Taylor, 2017-2022	Assistant Professor, BYU, Provo, UT

Undergraduate Research (2003-present)

BSCI 283 (Spring, 2003), Directed Research, Kellen Olszewski
BSCI 286 (Fall/Spring, 2004-5), Honors Research, Kellen Olszewski (Ph.D., Princeton Univ.)
BSCI 286 (Spring, 2004), Honors Research, Kelly McCoy (Ph.D., Emory Univ.)
BSCI 283 (Spring/Fall, 2004-5), Directed Research, Mousumi Medda
BSCI 286 (Fall/Spring, 2005-6), Honors Research, Mousumi Medda
BSCI 280 (2008), Research Internship, Alyssa Fesmire
BSCI 286 (Fall/Spring, 2010-2011) Honors Research, Alyssa Fesmire. (Medical Student, ETSU)
University Honors (2009), Kristy Hamilton (Medical Student, Baylor College of Medicine)
BSCI 283 (2011-2013). Directed Research, Megan Gornet (Medical Student, Johns Hopkins)
BSCI 280 (2014) Research Internship, Patrick Meyers
BSCI 283 (2014) Directed Research, Patrick Meyers
BSCI 286 (2015) Honors Research, Patrick Meyers
BSCI 283 (2014) Directed Research, Will Johnston (Medical Student, Tulane University)
BSCI 280 (2014) Research Internship, Michaela Novakovic
BSCI 283 (2015) Directed Research, Michaela Novakovic (PhD student, Northwestern)
NSC 3863 (2015) Advanced Research in Neuroscience, Allison Beers
NSC 4999 (2016-2017) Neuroscience Honors, Allison Beers (Med Student, Columbia Univ.)
BSCI 3861 (2016-2017) Directed Research, Adedeji Adeniyi
BSCI 3860 (2017-18) Research Internship, Nathan Hopkins
BSCI 3861 (2018) Directed Research, (Alice) Siqi Chen
BSCI 3961 (2019) Independent Research (Alice) Siqi Chen (PhD student, Johns Hopkins)
BSCI 3860 (2019) Research Internship, (Francis) Qiaochu Jiang
NSC 3861 (2020) Neuroscience Research, (Courtney) Jihoo Kim
BSCI 3860 (2020) Research Internship, Grace Lee
BSCI 3861 (2021) Directed Research, Grace Lee
BSCI 3961 (2021) Independent Research, Grace Lee
NSC 3861 (2021-22) Neuroscience Research, Kylie Howerter
NSC 3861 (Spring, 2022) Neuroscience Research, Genevieve Harvey
NSC 3862 (Fall, 2022) Neuroscience Research, Genevieve Harvey

Summer Interns (2013-present)

2013 Stephanie Engert (Duke), Vanderbilt Summer Science Academy (VSSA), PhD student, Berkeley
2014 Michaela Novakovic (Vanderbilt) Vanderbilt Undergraduate Summer Research Program (VUSRP), PhD student, Northwestern.
2014-17 Max Carter (Wake Forest University), Summer Intern, MD student, Wayne State
2014 Shannon Smith (Ohio State Univ.), Summer Intern, PhD student, Vanderbilt
2015 Allison Beers (Vanderbilt), Vanderbilt Undergraduate. Summer Research Program (VUSRP), MD student, Columbia University.
2016 Eliza Jaeger (Middlebury College), Vanderbilt Summer Science Academy (VSSA), PhD student, Columbia University
2017 Amanda Mitchell (Columbia University), Vanderbilt Summer Minority Research Program
2017 Jackson Newcomer (Vanderbilt) Summer Intern
2017 John Tipps (Middlebury College) Summer Intern, MD Student, Univ. of Pennsylvania.
2018 Isaiah Swann (UT Dallas), MSTP Summer Research Program.
2018 Siqi (Alice) Chen (Vanderbilt) Summer Intern, PhD student, Johns Hopkins
2018 Keejin Yoon (Vanderbilt) Summer Intern
2019 Will Hawkins (Centre College) Summer Intern, Research Assoc., Broad Institute.
2019 Eduard Tataru (Vanderbilt) Summer Intern
2019 Siqi (Alice) Chen (Vanderbilt) Vanderbilt Undergraduate Summer Research Program (VUSRP), PhD student, Johns Hopkins University
2023 Robert Held (Vanderbilt) Summer Intern
2023-24 Sophia Neuenhaus (Vanderbilt), Intern

International Interns

Jessica (Rivera) Von Stetina (2001) University of Puerto Rico-Cayey, Puerto Rico.
Alexandra Oranth (2014) Goethe University of Frankfurt.
Maria Lim (2014) University of Toronto.
Renzo Gutierrez (2015) Universidad Peruana Cayetano Heredia, Lima, Peru.
Carolina Manyari Diaz (2016)Universidad Peruana Cayetano Heredia, Lima, Peru.
Xueying Shang (2016) Fudan University, China
Carlos Mora Martinez (2018) Instituto Biomedicina de Valencia, Spain
Claudia Palacios Sanchez (2024) Universidad Peruana Cayetana Heredia, Lima, Peru.

High School Students (2009 – present)

Ian Boothby (2009-10) Senior Capstone Project, Hume Fogg HS (Harvard)
Eli Wilson (2010) Research Intern, School for Science and Math at Vanderbilt
Meg Mitchell (2011-13) Research Intern, Harpeth Hall School (Vanderbilt Medical School)
Micah Foster (2016) Research Intern, School for Science and Math at Vanderbilt (NYU)
Sophie Rowlett (2017) Summer Research Intern, St. Cecelia Academy, Nashville
Briza Vasquez (2018) Research Intern, School for Science and Math at Vanderbilt
Mia Brakebill (2019) Research Intern for Winterim, Harpeth Hall School, Nashville
Mia Brakebill (2019) Summer Research Intern (Rice University)
Sydney Heifner (2019-2020), Harpeth Hall Honors STEM Research (Washington & Lee)
Spencer Robbins (2020) Research Intern for Winterim, Harpeth Hall School, Nashville
Eleanor Rodgers (2020-21) Summer Research Intern, St. Cecelia Academy, Nashville
Tyler Myers (2020-21) Summer Research Intern, Brentwood High School, Brentwood, TN

GRADUATE STUDENT COMMITTEES, non-Miller Laboratory (1999-present):

STUDENT	FACULTY/DEPARTMENT		Ph.D. Awarded
Craig Tucker	R. Wisdom	Biochemistry	1999
Amy Weincken (Chair)	V. Casagrande	Cell and Developmental Biology	2000

David Reese	D. Bader	Medicine	2000
Kim Fekaney	L. Solnica-Krezel	Biological Sciences	2001
Michael Christensen	K. Strange	Pharmacology	2002
Josh Nickols (Chair)	B. Carter	Biochemistry	2003
David Jones	L. Solnica-Krezel	MS student, Biological Sciences	2003
S. M. Ferguson (Chair)	R. Blakely	Neuroscience	2004
Drew Latimer	B. Appel	Biological Sciences	2004
J. K. Song (Chair)	C. Desai	Cell and Developmental Biology	2004
Eric Ward (Chair)	C. Desai	Neuroscience	2005
X. Q. Werdich (Chair)	J. Penn	Cell and Developmental Biology	2005
Mary Kosinski (Chair)	D. Greenstein	Cell and Developmental Biology	2005
Nick Trotta	K. Broadie	Biological Sciences	2005
Y. Ryun-Cha (Chair)	C. Wright	Cell and Developmental Biology	2005
Paul Macdonald (Chair)	R. Blakely	Neuroscience	2005
Jana Harris (Chair)	D. Greenstein	Cell and Developmental Biology	2006
Yuki Ohi	C. Wright	Cell and Developmental Biology	2006
Yina Li (Chair)	C. Chiang	Cell and Developmental Biology	2007
Humin Zhang (Chair)	C. Chiang	Cell and Developmental Biology	2007
Jimann Shin	B.Appel	Biological Sciences	2007
Luyuan Pan	K. Broadie	Biological Sciences	2007
J. A. Govindan (Chair)	D. Greenstein	Cell and Developmental Biology	2007
A.Alcazar-Roman (Chair)	S. Wente	Cell and Developmental Biology	2007
Jami Day (Masters)	S. Huppert	Cell and Developmental Biology	2007
Hua Cheng (Chair)	D. Greenstein	Cell and Developmental Biology	2008
Jessie Von Stetina (Chair)	D. D-Barbosa	Cell and Developmental Biology	2008
Denise Zannino (Chair)	B. Appel	Neuroscience	2009
Yuhan Hao (Masters)	G. Gu	Cell and Developmental Biology	2009
Michael Anderson (Chair)	L. Lee	Cell and Developmental Biology	2009
Matt Judson	P. Levitt	Neuroscience	2009
Kirsten Helmcke	M. Ashner	Pharmacology	2010
Jia Zhang	M. Gannon	Cell and Developmental Biology	2010
Ashleigh Long	K. Broadie	Biological Sciences	2010
Susan Yanni (Chair)	J. Penn	Cell and Developmental Biology	2010
Andrew Benesh (Chair)	M.Tyska	Cell and Developmental Biology	2011
Stephanie Sullivan	C. Konradi	Neuroscience	2011
Laura Stevens (Chair)	A. Page-McCaw	Cell and Developmental Biology	2012
Sarah Broderick (Chair)	A. Page-McCaw	Cell and Developmental Biology	2013
Tim Simmons	B. Appel	MS, Biological Sciences	2013
Alyssa Johnson (Chair)	K. Gould	Cell and Developmental Biology	2013
Joshua Hurley	D. Webb	Biological Sciences	2013
Andrew Hardaway (Chair)	R. Blakely	Neuroscience	2013
Poojitha Sitaram (Chair)	L. Lee	Cell and Developmental Biology	2013
Jonathan Fleming	C. Chiang	Cell and Developmental Biology	2014
Jessica Sweatt	C. Wright	MS, Cell and Developmental Biology	2014
Erica Tross	B. Nelms	MS student, Fisk University	2014
Bobby Jones	B. Nelms	MS student, Fisk University	2014
Benjamin Dean (Chair)	J. Gamse	Neuroscience	2014
Neil Dani	K. Broadie	Biological Sciences	2014
Colin Bretz	J. Penn	Cell and Developmental Biology	2015
Corey Roach	B. Nelms	MS student, Fisk University	2015
Daniel Levic (Chair)	E. Knapik	Cell and Developmental Biology	2015
Sandra Suarez	J. Penn	Cell and Developmental Biology	2015
David Paik	A. Hatzopoulos	Cell and Developmental Biology	2015

Aditi (Chair)	S. Wente	Cell and Developmental Biology	2016
Dan Bermingham	R. Blakely	Neuroscience	2016
Caleb Howard (Chair)	W. Tansey	Cell and Developmental Biology	2016
Kai Bracey	B. Nelms	MS student, Fisk University	2016
Bryan Cawthon	B. Nelms	MS student, Fisk University	2016
Jennifer Stancill	M. Magnuson	Cell and Developmental Biology	2017
Laura Armstrong (Chair)	K. Ess	Cell and Developmental Biology	2017
Casey Paton	B. Nelms	MS student, Fisk University	2017
Jennifer Quinde	B. Nelms	MS student, Fisk University	2017
Chelsea Snarrenberg	R. Blakely	Neuroscience	2018
Aidan Fenix (Chair)	D. Burnette	Cell and Developmental Biology	2018
Debresha Shelton	B. Nelms	MS student, Fisk University	2018
Destane Garrett	B. Nelms	MS student, Fisk University	2018
J. Tyler Kennedy	K. Broadie	Biological Sciences	2019
Christi Salisbury-Ruf (Chair)	S. Zinkel	Cell and Developmental Biology	2019
Gabrielle Sandusky (Chair)	R. Ihrie	Cell and Developmental Biology	2019
Cristina Robinson	N. Creanza	Biological Sciences	2019
Matthew Kent	J. Patton	Biological Sciences	2020
Xiao-Dun Yang (Chair)	G. Gu	Cell and Developmental Biology	2020
Marina Hanna	B. Nelms	MS student, Fisk University	2020
Gustavo Garriga	B. Nelms	MS Student, Fisk University	2020
Cait Kirby	M. Patel	Biological Sciences	2021
Randy Golovin (Chair)	K. Broadie	Neuroscience	2021
Kayla Shumate	R. Emeson	Pharmacology	2021
Dominic Vita	K. Broadie	Biological Sciences	2021
Claire Strothman	M. Zanic	Cell and Developmental Biology	2021
Meredith Giblin	J. Penn	Cell and Developmental Biology	2021
Lauren Luderman	E. Knapik	Cell and Developmental Biology	2022
Shwetha Narasimhan (Chair)	I. Kaverina	Cell and Developmental Biology	2022
Kai Bracey (Chair)	I. Kaverina	Cell and Developmental Biology	2023
Chunzhu Song	K. Broadie	Biological Sciences	2023
Joseph Masters	J. Eley	MS student, Medical Physics	2023
Gabriella Roberston (Chair)	V. Gama	Cell and Developmental Biology	2024
James Held	M. Patel	Biological Sciences	2024
Gianna Davis	B. Nelms	MS Student, Fisk University	2023

Current

Stephanie Medina (Chair)	R. Ihrie	Cell and Developmental Biology
Jaybree M. Lopez (Chair)	R. Sando	Neuroscience
Claire Scott	J. Spraggins	Cell and Developmental Biology
Arlene Garcia (Chair)	M. Patel	Biological Sciences
Lee Nury (Chair)	J. Bastarache	Cell and Developmental Biology
Morgan Ottley	R. Sando	Neuroscience
Fei Yang	R. Sando	Neuroscience
James Allen	R. Sando, QJ Zhou	Neuroscience

FACULTY MENTORING COMMITTEES

Matt Tyska	CDB	2004-2010
Dylan Burnette	CDB	2015-2021
Kris Burkewitz (Chair)	CDB	2019-present
Qiangjun (QJ) Zhou (Chair)	CDB	2020-present
Neil Dani	CDB	2023-present

LECTURING AND COURSE DIRECTORSHIP (1995-present):

Fall, Annual (1995 - 2009)	Bioregulation	Genetics & Development, **Director** 6 wk course for 1st year graduate students (4-9 lectures) (~90 students)
Fall, 2010-17	Bioregulation	Genetics. 3 wk course for 1st year grad. Students (3 lectures)
Spring, 1999	MDB 341	Molecular Developmental Biology, EGFR signaling, **Co-director** (Threadgill) (4 lectures) (20 students)
Spring, 2001	MDB 341	Molecular Developmental Biology, Axon guidance (2 lectures) (20 students)
Spring, 2004	MDB 341	Molecular Developmental Biology, Cell Polarity, **Co-director** (Greenstein), (4 lectures) (12 students)
Spring, 2003-05, 08, 14-24	CBIO 338/8338	Special Topics in Cell and Developmental Biology. (1 lecture) (15 students)
Spring, 1999	NURO 356	Developmental Neurobiology, Differentiation of Motor circuits. Director. (4 lectures). 10 students.
Fall, 2001, 2004	NURO 325	Foundations in Neuroscience (1 Lecture) (10 students)
Fall, 2002	NURO 335	Special Topics in Neuroscience. Imaging Methods: Cells to Brains (1 lecture) 15 students.
Spr 2004-9,11-24	NURO 8345	Cellular and Molecular Neuroscience. Neural Development and Signaling (3 lectures) (35 students).
Spr 2006, 08,11	CBIO 330	Seminars in Cell Biology (2-4 lectures) 15-20 students
Spr 2007,9,11	MPB 349	Genetics of Model Organisms. (3 lectures) (15 students)
Sum 2007-13,22-23	PDB	Developmental Biology “Boot Camp” (2 lectures/labs) (15 students)
Spring, 2008	CBIO 333	Reproductive Biology (2 lectures) (2 students)
Spring, 2009	BSCI 210	Introduction to Genetics (12 lectures) 36 students (Undergraduate).
2008 – 2013	IMPACT	Leader, weekly discussion meeting with 10-12 IGP students.
2014-2015	CBIO 320	Lecture/Discussion, Cancer and Embryonic Develop, 15 students.
2019	NSC3269	Developmental Neuroscience, 50 undergraduates
2023	IGP Block	“Membrane cytoskeleton interface as a master organizer of cell function”, 12 students, 14 contact hours

SERVICE

Vanderbilt:

Interdisciplinary Graduate Program (IGP) Executive Committee (2001-2009)
CDB Steering Committee for Graduate Education, CDB (2002-2009)
Faculty Search Committee, Kennedy Center and CDB (2004-5)
Vanderbilt Cell Imaging Shared Resource (Imaging Core) Advisory Committee
Vanderbilt Center for Molecular Neuroscience, Advisory Committee
BRET Steering Committee (2010)
Faculty Appointments and Promotion Committee (Vanderbilt Medical School) (2011-2013)
Vanderbilt Flow Cytometry Advisory Committee (2009-Present)
CDB Faculty Search Committee (2012- 2013, 2014-2015)
Vanderbilt Limited Submission Opportunities Review Panel (2012-2016)
Faculty Advisory Committee for VANTAGE, Vanderbilt Technologies for Advanced Genomics (2014 -Present)
Vanderbilt University Cross-College Teaching Initiative (2014 – 2016)
Vanderbilt University Courses Committee (2017 – 2019)
CDB Communications and Computer Committee-Chair (2013-present)

Neuroscience Program Admissions Committee (2014 -2016)
Vanderbilt Kennedy Center Seminar Committee (2015)
Internal Advisory Board, Neurogenomics Training grant (2012- present)
Cell Imaging Shared Resource (CISR) Faculty Advisory Committee (2018-Present)
Graduate Faculty Council (GFC) (2018-2019)
Vanderbilt Brain Institute Faculty Search Committee (2018-2019)
Reviewer for Vanderbilt Undergraduate Summer Research Program (2021-2024)

International
Scientific Advisor, Nervspan PhD Program (2024-2029)

Training Grants (Mentor)	**PI**
Developmental Biology	Chris Wright
Functional Neurogenomics	Roger Colbran
Ion Channel and Transporter Biology	Bjorn Knollman
Neuroscience	Danny Winder
CBMS (Cellular, Biochemical and Molecular Sciences)	Jim Patton

NIH Study Section and Grant Reviewing:

Reviewer: NSF, Wellcome Trust, US-Israel Binational Science Foundation, MS AL Seagrant Consortium, Boehringer Ingelheim Fonds, India Alliance DBT Wellcome, Biotechnology and Biological Sciences Research Council (BBSRC, UK), AFM-Telethon (France), Royal Society Wolfson Fellowship 2023

NIH NCF-7 Panel, 2004 -2005
NIH MDCN-K Panel, December, 2007.
NIH Special Emphasis Panel, ZRG1 MDCN-T, Fall, 2011, Summer 2012, Spring 2013
NIH NST-2 Panel, 2013 – 2014
NIH Special Emphasis Panel ZNS1 SRB-M(12) for R35 review, November, 2019
Undiagnosed Disease Network (UDN), February, 2020
NIH Synapses, Cytoskeleton and Trafficking (SYN) Study Section, June, 2020
NIAID COVID-19 Emergency Awards Panel, August, 2020
NIH Neurobiology of Motivated Behavior (NMD), March, 2021

Member: NIH NST-2 Panel, 2015-2019

Editorial Responsibilities:

Editorial Board: *genesis: the Journal of Genetics and Development*

Peer Reviewer for:

Science	*Nature Neuroscience*	*Neuron*
Cell Reports	*Developmental Cell*	*J. Neuroscience*
Genetics	*Genes and Development*	*Human Molecular Genetics*
Current Biology	*eLife*	*Mol. Cellular Neuroscience*
PLoS Genetics	*Development*	*BMC Neuroscience*
Developmental Biology	*BMC Genomics*	*Journal of Cell Science*
Proc. Natl. Acad. Sci.	*Nucleic Acids Research*	*Mech. of Development*
Nature Protocols	*Molecular Cell Biology*	*Dev. Dynamics*
Nature Methods	*Genome Biology*	*Biotechniques*
Nature Communications	*Genesis*	*Genes to Cells*
Journal of Visualized Experiments	*Disease Models and Mechanisms*	

Molecular Biology of the Cell	*Journal of Microscopy*	*Dev. Neurobiology*
Cytoskeleton	*WIREs Develop. Biology*	*G3*
PLoS One	*Micropublications*	*Science Advances*
Bioinformatics Advances	*Mol. Biol. of the Cell*	*Biophysical Journal*
Aging Cell	*Cell Genomics*	

Professional Societies:

Genetics Society of America (2003-Present)
American Society of Cell Biology (1983-2002, 2022-Present)
Society for Developmental Biology (1994-Present)
American Association for the Advancement of Science (1988-Present)
Society for Neuroscience (1999 – Present)

INVITED SEMINARS (2009-present):

June, 2024	Keynote Speaker, CeNeuro, Madison Wisconsin
January, 2024	Keynote Speaker, Nervspan Kickoff Meeting, Bordeaux, France
July, 2022	Meeting Organizer, CeNeuro, Vienna Austria.
Jan, 2022	Webinar, International Gap Junction Conference.
April, 2021	Univ. of Tennessee Health Science Center, Pharmacology, Memphis, TN
April, 2021	University of Wisconsin, Madison, Department of Integrative Biology
July, 2020	Meeting Organizer, CeNeuro, Vienna Austria (canceled)
June 2019	Plenary Talk, International *C. elegans* Meeting, UCLA
July 2018	Keynote Address, School for Science and Math at Vanderbilt, Summer Symposium
May 2018	University of Chicago, Department of Neurobiology.
Nov 2017	Albert Einstein College of Medicine, Dept. of Genetics, NYC
Jun 2016	EMBO Workshop, *Mechanisms of Neuronal Remodeling*, Seeon, Germany.
Mar 2016	Middlebury College, Middlebury, VT
Jan 2016	Barshop Institute for Longevity and Aging Studies, San Antonio, TX
Dec 2015	Univ. of Tennessee Health Science Center, Neuroscience Institute, Memphis, TN
Dec 2014	SUNY-Buffalo, Dept. of Biochemistry
Sep 2014	Vanderbilt University, Department of Biological Sciences
Mar 2014	EMBO Workshop, *Mechanisms of Neuronal Remodeling*, Ein-Gedi, Israel,
Mar 2014	Belmont University, Brain Awareness Week, Nashville, TN
Feb 2014	Columbia University, Dept. of Biochemistry and Molecular Biophysics
Feb 2014	University of Kansas, Dept. of Molecular Biosciences, *Bold Aspirations Lecture Series*
Feb 2014	University of Massachusetts Medical School, Department of Neurobiology
Jan 2014	Duke University, Developmental & Stem Cell Biology Colloquium
Nov 2013	University of Kansas, Dept. of Molecular Biosciences, *Bold Aspirations Lecture Series*
Oct 2013	UT Medical Branch, Galveston, Department of Neuroscience and Cell Biology
Sep 2013	Baylor College of Medicine, Structural Biology
Dec 2012	University of Miami School of Medicine, Department of Physiology and Biophysics
Nov 2012	Vanderbilt University, Genetics Interest Group (GIG)
May 2012	Society for Develop. Biology, Southeast Regional Meeting, Memphis, TN
May 2012	NIH NIDDK, Bethesda, MD
Mar 2012	Gordon Research Conference. *Genes and Behavior,* Galveston, TX
Mar 2012	University of Minnesota, Minneapolis, MN
Aug 2011	Vanderbilt University, Department of Biological Sciences,
Feb 2010	Johns Hopkins University School of Medicine, Baltimore, MD
Nov 2009	Purdue University, South Bend, IN
Oct 2009	Institute of Genetics and Developmental Biology, CAS, Beijing, PRC
Oct 2009	National Institute of Biological Sciences, Beijing, PRC
Oct 2009	Institute of Dev. Biology and Molecular Medicine, Fudan University, Shanghai, PRC

Oct 2009 Institute of Neuroscience, Chinese Academy of Sciences, Shanghai, PRC
Jun 2009 University of Oregon, *Neural Circuits Symposium*.

INVENTIONS AND PATENTS

Assay for toxin-induced neuronal degeneration and viability in *C. elegans*.
Co-inventors: R. D. Blakely, R. Nass, **D. M. Miller, III.** U.S. Patent 7,531,713

PUBLICATIONS (Miller lab in bold)

Published Manuscripts:

1. Quiocho, F. A., Gilliland, G. L., **Miller, D. M.,** and Newcomer, M. E. (1977) Crystallographic and chemical studies of the L-arabinose-binding protein from E. coli. *J. Supramol. Struc. 6, 503-518.*
2. **Miller, D.M., III**, Newcomer, M. E. and Quiocho, F. A. (1979). The thiol group of the L-arabinose-binding protein. *J. Biol. Chem. 254, 7521-7528.*
3. Newcomer, M. E., **Miller, D. M., III** and Quiocho, F. A. (1979). Location of the sugar-binding site of L-arabinose binding protein. J. Biol. Chem. 254 , 7529-7533.
4. **Miller, D.M., III**, Olson, J. S. and Quiocho, F. A. (1980). The mechanism of sugar-binding to the periplasmic receptor for galactose chemotaxis and transport in *Escherichia coli*. *J. Biol. Chem. 255, 2465 – 2471*
5. **Miller, D. M., III**, Olson, J. S., Pflugrath, S. W. and Quiocho, F. A., (1983). Rates of ligand binding to periplasmic proteins involved in bacterial transport and chemotaxis. *J. Biol. Chem. 258, 13665 – 13672*
6. **Miller, D. M., III**, Ortiz, I., Berliner, G. C. and Epstein, H. F. (1983) Differential localization of two myosins within nematode thick filaments. *Cell 34, 477-490.* PMID: 6352051
7. Epstein, H. F., **Miller, D. M., III,** Ortiz, I. and Berliner, G. C. (1985) Myosin and paramyosin are organized about a newly identified core structure. *J. Cell Biol. 100, 904-914.*
8. Watts, F. Z., **Miller, D. M.** and Orr, E. (1985). Identification of myosin heavy chain in *Saccharomyces cerevisiae*. *Nature 316, 83-85.*
9. **Miller, D. M.,** Stockdale, F. and Karn, J. (1986) Immunological identification of the genes encoding the four myosin heavy chains of *Caenorhabditis elegans*. *Proc. Natl. Acad. Sci. USA 83, 2305 - 2309.*
10. Maruyama, I., **Miller, D. M.** and Brenner, S. (1989) Myosin heavy chain gene amplification as a suppressor mutation in *Caenorhabditis elegans*. *Mol. Gen. Genetics. 219, 113-118.*
11. **Miller, D.M.,** Shen, M.M., Shamu, C.E., Bürglin, T.R., Ruvkun, G., **Dubois, M.L., Ghee, N.,** and **Wilson, L.** (1992) *C. elegans unc-4* gene encodes a homeodomain protein that determines the pattern of synaptic input to specific motor neurons. *Nature 355, 841-845.*
12. **Miller, D.M, III, Niemeyer, C.J., and Chitkara, P.** (1993) Dominant *unc-37* mutations suppress the movement defect of a homeodomain mutation in *unc-4*, a neural specificity gene in *Caenorhabditis elegans*. *Genetics 135, 741-753.*
13. **Miller, D.M., III and Niemeyer, C.J.** (1995) Expression of the *unc-4* homeoprotein in *C. elegans* motor neurons specifies presynaptic input. *Development 121, 2877-2886.*

14. ***Pflugrad, A., *Meir, J. Y.-J**., Barnes, T. and **Miller, D. M., III**. (1997) The groucho-like transcription factor UNC-37 functions with the neural specificity gene *unc-4* to govern motor neuron identity in *C. elegans*. *Development 124, 1699-1709.* (*This authors contributed equally)

15. Lankupalle, J., Apparsundaram, S., Malone, M. D., Ward, E., **Miller, D. M.,** Eppler, M., and Blakely, R. D. (1998) The *Caenorhabditis elegans* gene T23G5.5 encodes an antidepressant and cocaine-sensitive dopamine transporter. *Molecular Pharmacology, 54(4), 601-609.*

16. **Miller, D. M., III, Desai, N., Hardin, D.,** Piston, D. W., Patterson, G.H., Fleenor, J., Xu, S.Q., and Fire, A. (1999) A two-color GFP expression system for *C. elegans*. *BioTechniques 26, 914-921.*

17. ***Winnier, A. R. , *Meir, J. Y.-J., Ross, J. M.,** Ishihara, T., Katsura, I., Tavernarakis, N., Driscoll, M., and **Miller, III, D. M.** (1999) UNC-4/UNC-37-dependent repression of motor neuron-specific genes controls synaptic choice in *Caenorhabditis elegans*. *Genes and Develop. 13, 2774-2786.* (*This authors contributed equally)

18. Bianchi, L., **Miller, D. M., III,** and George, A.L., Jr. (2001) GABAergic RME neurons in *C. elegans* express the *clh-6* chloride channel. *Neuroscience Letts. 299, 177-180.*

19. **Lickteig, K. M**., Duerr, J. S., Frisby, D. L., Hall, D. H., Rand, J. B. and **Miller, D. M., III** (2001) Regulation of neurotransmitter vesicles by the homeodomain protein UNC-4 and its transcriptional co-repressor UNC-37/Groucho in *Caenorhabditis elegans* cholinergic motor neurons. *J. Neuroscience 21: 2001-2014.*

20. Nass, R., **Miller, D. M., III** and Blakely, R. D. (2001) *C. elegans*: A novel pharmacogenetic model to study Parkinson's disease. *Parkinsonism and Related Disorders 7, 185-191.*

21. Christensen, M., Estevez, A., Yin, X., **Fox, R.,** Morrison, R., **McDonnell, M., Gleason, C., Miller, D. M. III** and Strange, K. (2002) A primary culture system for functional analysis of *C. elegans* neurons and muscle cells. *Neuron 33, 503-514.* PMID: 11856526.

22. Nass, R., Hall, D.H., **Miller, D. M. III** and Blakely, R.D. (2002) Neurotoxin-induced degeneration of dopamine neurons in *C. elegans*. *Proc. Natl. Acad. Sci. USA 99, 3264-3269.*

23. Esmaeili, B., **Ross, J. M**., Neades, C., **Miller, D. M., III**, and Ahringer, J. (2002) The *C. elegans even-skipped* homolog, *vab-7*, specifies DB motor neuron identity and axon trajectory. *Development 129, 853-862.*

24. Sedensky, M. M., Siefker, J.M., **Koh, J. Y., Miller, D. M. III**, Morgan, P.G. (2004) A stomatin and a degenerin interact in lipid rafts of the nervous system of *Caenorhabditis elegans*. *Am. J. Physiol Cell Physiol 287, C468-74.*

25. **Fox, R. M., Von Stetina, S. E., Barlow, S. J., Olszewski, K.,** Shaffer, C, Moore, J. H., Dupuy, D., Vidal, M., and **Miller, D. M. III**. (2005) A gene expression fingerprint of *C. elegans* embryonic motor neurons. *BMC Genomics 6:42.* Highly accessed

26. *Touroutine, D., ***Fox, R.M., Von Stetina, S.E.,** Burdina, A., **Miller, D.M., III** and Richmond, J.E. (2005) *acr-16* encodes an essential subunit of the levamisole-resistant nicotinic receptor at the *C. elegans* neuromuscular junction. *J Biol Chem. 280, 27013-21*(*these authors contributed equally

27. Varadan V., **Miller, D.M. III,** Anastassiou, D. (2006) Computational Inference of the molecular logic for synaptic connectivity in *C. elegans*. *Bioinformatics 22, e497-e506.*

28. ***SE Von Stetina, *RM Fox, KL Watkins,** TA Starich, JE Shaw, and **DM Miller, III** (2007) UNC-4 represses CEH-12/HB9 to specify synaptic inputs to VA motor neurons in *C. elegans.* *Genes and Dev* **21**: 332-346. (*This authors contributed equally) PMCID: PMC1785118.

29. ***Von Stetina, S. E, *Watson, J.D., Fox, R.M., Olszewski, K.,** Roy, P. **Miller, D.M. III.** (2007) Cell-specific microarray profiling reveals a comprehensive picture of gene expression in the *C.*

elegans nervous system. *Genome Biology, **8**:R135* (*This authors contributed equally) ***Highly Accessed.*** PMCID: PMC2323220. Highly accessed

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33. B Meissner, A Warner, K Wong, N Dube, A Lorch, SJ McKay, J Khattra, T Rogalski, A Somasiri, I Chaudhry, **RM Fox, DM Miller, III,** DL Baillie, RA Holt, SJM Jones, MA Marra, DG Moerman. (2009) An integrated strategy to study muscle development and myofilament structure in *C. elegans* *PLoS Genetics **5**: e1000537.*

34. M Chatzigeorgiou, S Yoo, **JD Watson,** W-H Lee, **WC Spencer**, KS Kindt, SW Hwang, **DM Miller, III,** M Treinin, M Driscoll, WR Schafer (2010) Specific roles for DEG/ENaC and TRP channels in touch and thermosensation in *C. elegans* nociceptors. *Nature Neuroscience **13,** 861-868.* PMID: 20512132.

35. ***CJ Smith, *JD Watson, WC Spencer, T O'Brien,** B Cha, A Albeg, M Treinin, **DM Miller, III** (2010) Time-lapse imaging and cell-specific expression profiling reveal dynamic branching and molecular determinants of a multi-dendritic nociceptor in *C. elegans*. *Developmental Biol. 345, 18-33.* PMID: 20537990. *These authors contributed equally. Cover Art

36. ***LR Earls, * ML Hacker, JD Watson, DM Miller, III.** (2010) Coenzyme Q protects GABA neurons in *C. elegans* from calcium-dependent degeneration. *Proc. Nat. Acad Sci 107, 14460-14465*. PMID: 20663955 *These authors contributed equally. Recommended by Faculty of 1000.

37. Thorne CA, Hanson AJ, **Schneider J**, Tahinci E, Orton D, Cselenyi CS, Jernigan KK, Meyers KC, Hang BI, Waterson AG, Kim K, Melancon B, Ghidu VP, Sulikowski GA, Lafleur B, Salic A, Lee LA, **Miller DM III**, Lee E (2010) Small-molecule inhibition of Wnt signaling through activation of casein kinase 1a. *Nature Chemical Biology 6, 829-836*. PMID: 20890287

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39. MB Gerstein, ZJ Lu, EL Van Nostrand, C Cheng, BI Arshinoff, T Liu, KY Yip, R Robilotto, A Rechtsteiner, K Ikegami, P Alves, A Chateigner, M Perry, M Morris, R K Auerbach, X Feng, J Leng, A Vielle, W Niu, K Rhrissorrakrai, A Agarwal, RP Alexander, G Barber, CM Brdlik, J Brennan, JJ Brouillet, A Carr, M-S Cheung, H Clawson, S Contrino, LO Dannenberg, AF Dernburg, A Desai, L Dick, AC Dos´e, J Du, T Egelhofer, S Ercan, G Euskirchen, B Ewing, EA Feingold, R Gassmann, PJ Good, P Green, F Gullier, M Gutwein, MS Guyer, L Habegger, T Han, JG Henikoff, SR Henz, A Hinrichs, H Holster, T Hyman, AL Iniguez, J Janette, M Jensen, M Kato, WJ Kent, E Kephart, V Khivansara, E Khurana, JK Kim, P Kolasinska-Zwierz, EC Lai, I Latorre, A Leahey, S Lewis, P Lloyd, L Lochovsky, RF Lowdon, Y Lubling, R Lyne, M MacCoss, S D Mackowiak, M Mangone, S McKay, D Mecenas, G Merrihew, **DM Miller, III**, A Muroyama, J I Murray, S-L Ooi, H Pham, T

Phippen, EA Preston, N Rajewsky, G R¨atsch, H Rosenbaum, J Rozowsky, K Ruther- ford, P Ruzanov, M Sarov, R Sasidharan, A Sboner, P Scheid, E Segal, H Shin, C Shou, FJ Slack, C Slightam, R Smith, **WC Spencer**, EO Stinson, S Taing, T Takasaki, D Vafeados, K Voronina, G Wang, NL Washington, CM Whittle, B Wu, K-K Yan, G Zeller, Z Zha, M Zhong, X Zhou, modENCODE Consortium, J Ahringer, S Strome, KC Gunsalus, G Micklem, XS Liu, V Reinke, SK Kim, LW Hillier, S Henikoff, F Piano, M Snyder, L Stein, JD Lieb, and RH Waterston (2010) Integrative analysis of the *C. elegans* genome by the modENCODE project. *Science 330, 1775-1787.* PMCID: PMC3142569.

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41. EA Hallem, **WC Spencer, RD McWhirter,** G Zeller, SR Henz, G Ratsch, **DM Miller, III,** HR Horvitz, PW Sternberg, R Ringstad (2011) Receptor-type guanylate cyclase is required for carbon dioxide sensation by *Caenorhabditis elegans*. *Proc. Nat. Acad. Sci. 108, 254-259.* PMID: 21173231.

42. ZJ Lu, KY Yip, G Wang, C Shou, LW Hillier, E Khurana, A Agarwal, R Auerbach, J Rozowsky, C Cheng, M Kato, **DM Miller**, F Slack, M Snyder, RH Waterston, V Reinke, M Gerstein (2011) Prediction and characterization of non-coding RNAs in *C. elegans* by integrating conservation, secondary structure and high throughput sequencing and array data. *Genome Research 21, 276-285.* PMCID:PMC3032931.

43. **WC Spencer*,** G Zeller*, **JD Watson**, SR Henz, **KL Watkins, RD McWhirter, SC Petersen**, VT Sreedharan, C Widmer, J Jo, V Reinke, L Petrella, S Strome, **S Von Stetina**, M Katz, S Shaham, G Raetsch, **DM Miller, III** (2011). A spatial and temporal map of *C. elegans* gene expression. *Genome Research 21: 325-341.* *These authors contributed equally. PMID: 21177967.

44. **SC Petersen, JD Watson,** JE Richmond, M Sarov, WW Walthall, **DM Miller, III** (2011). A transcriptional program promotes remodeling of GABAergic synapses in *Caenorhabditis elegans*. *J. Neuroscience 31, 15362–15375*. PMID: 22031882.

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46. SJ Husson, WS Costa, JN Stirman, **JD Watson, WC Spencer, DM Miller, III,** H Lu, A Gottschalk (2012). Optogenetic analysis of a nociceptor neuron and network reveals ion channels acting downstream of primary sensors. *Current Biology* 22, 743-752. PMID: 22483941.

47. **JD Schneider*, RL Skelton*, SE Von Stetina*,** A van Oudenaarden, T Middelkoop, H. Korswagen**, DM Miller, III** (2012). UNC-4 antagonizes Wnt signaling to regulate synaptic choice in the *C. elegans* motor circuit. *Development 139,* 2234-2245. PMCID: PM3357913. *These authors contributed equally.

48. ***CJ Smith, *T O'Brien,** M Chatzigeorgiou, **WC Spencer, E Feingold-Link**, SJ Husson, S Hori, S Mitani, A Gottschalk, WR Schafer, **DM Miller, III** (2013). Sensory neuron fates are distinguished by a transcriptional switch that regulates dendrite branch stabilization. *Neuron* 79**,** 266-280. PMID: 23889932. *These authors contributed equally.

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50. Mark Gerstein, Joel Rozowsky, Koon-Kiu Yan, Daifeng Wang, Chao Cheng, James Brown, Carrie Davis, LaDeana Hillier, Cristina Sisu, Jingyi Li, Baikang Pei, Arif Harmanci, Michael Duff, Sarah Djebali, Roger Alexander, Burak Alver, Raymond Auerbach, Kimberly Bell, Peter Bickel, Max Boech, Nathan Boley, Benjamin Booth, Lucy Cherbas, Peter Cherbas, Chao Di, Alex Dobin, Jorg Drenkow, Brent Ewing, Gang Fang, Meagan Fastuca, Elise Feingold, Adam Frankish, Guanjun Gao, Peter Good, Phil Green, Roderic Guigo, Ann Hammonds, Jennifer Harrow, Roger Hoskins, Cédric Howald, Long Hu, Haiyan Huang, Tim Hubbard, Chau Huynh, Sonali Jha, Dionna Kasper, Masaomi Kato, Thomas Kaufman, Robert Kitchen, Erik Ladewig, Julien Lagarde, Eric Lai, Jing Leng, Zhi Lu, Michael MacCoss, Gemma May, **Rebecca McWhirter,** Gennifer Merrihew, **David M Miller III,** Ali Mortazavi, rabi Murad, Brian Oliver, Sara Olson, Peter Park, Michael Pazin, Norbert Perrimon, Dmitri Pervouchine, Valerie Reinke, Alexandre Reymond, Garrett Robinson, Anastasia Samsonova, Gary Saunders, Felix Schlesinger, Anurag Sethi, Frank Slack, **William Spencer**, Marcus Stoiber, Pnina Strasbourger, Andrea Tanzer, Owen Thompson, Kenneth Wan, Guilin Wang, Huaien Wang, **Kathie Watkins**, Jiayu Wen, Kejia Wen, Chenghai Xue, Li Yang, Kevin Yip, Christopher Zaleski, Yan Zhang, Henry Zheng, Steven Brenner, Brenton Graveley, Susan Celniker, Thomas Gingeras, and Robert Waterston (2014) Comparative Analysis of the Transcriptome across Distant Species. *Nature* 512, 445-448. PMCID: PMC4155737.

51. **W. Clay Spencer, Rebecca McWhirter, Tyne Miller,** Pnina Strasbourger, Owen Thompson, LaDeana W. Hillier, Robert H. Waterston, **David M. Miller, III** (2014) Isolation of specific neurons from *C. elegans* larvae for gene expression profiling. *PLOS ONE 9, e112102.* PMCID: PMC4221280.

52. J. Andrew Hardaway, Sarah M. Sturgeon, Chelsea L. Snarrenberg, Zhaoyu Li, X.Z. Shawn Xu, Daniel P. Bermingham, Peace Odiase, **W. Clay Spencer, David M. Miller, III,** and Randy D. Blakely (2015) Glial Expression of the *Caenorhabditis elegans* Gene *swip-10* Supports Glutamate Dependent Control of Extrasynaptic Dopamine Signaling. *J. Neuroscience* 35, 9409-9423. PMID: 26109664.

53. *__Siwei He__, *Allison Philbrook, **Rebecca D. McWhirter**, Christopher V. Gabel, Daniel G. Taub, **Maximillian H. Carter**, **Isabella M. Hanna**, Michael M. Francis, **David M. Miller, III** (2015) Transcriptional control of synaptic remodeling through regulated expression of an immunoglobulin superfamily protein. *Current Biology 25, 2541–2548.* *These authors contributed equally. PMID: 26387713.

54. ***Tyne W. Miller-Fleming, *Sarah C. Petersen**, Laura Manning, Cristina Matthewman, **Megan Gornet, Allison Beers,** Sayaki Hori, Shohei Mitani, Laura Bianchi, Janet Richmond, **David M. Miller, III**. (2016) The DEG/ENaC channel protein UNC-8 drives activity-dependent synapse removal in remodeling GABAergic neurons. *eLife 5, e14599.* *These authors contributed equally. PMID: 27403890.

55. Alexandra B Byrne, **Rebecca D. McWhirter**, Yuichi Sekine, Stephen Strittmatter, **David M. Miller, III,** Marc Hammarlund (2016). Inhibiting Poly(ADP-Ribosylation) improves axon regeneration. *eLife, 5: e12734.* PMID: 27697151.

56. Cristina Matthewman, **Tyne Miller-Fleming, David M. Miller, III,** Laura Bianchi (2016). The role of Ca2+ permeability and Na+ conductance in cellular toxicity caused by hyperactive DEG/ENaC channels. *American Journal of Physiology-Cell Physiology 311, C920-C930.* PMID: 27760755.

57. Maria A. Lim, Jyothsna Chitturi, Valeriya Laskova, Daniel Findeis, Anne Wiekenberg, Ben Mulcahy, Yangning Lu, Ni Ji, Wesley Hung, Yixin Qu, Chi-Yip Ho, Douglas Holmyard, **Rebecca D McWhirter**, Aravinthan D. T. Samuel, **David M. Miller, III**, Ralf Schnabel, John A. Calarco, Mei

Zhen (2016). Neuroendocrine Regulation of Forward Locomotion in *Caenorhabditis elegans.* *eLife, 5: e19887*. PMID: 27855782.

58. Daniel P. Bermingham, J. Andrew Hardaway, Osama Refai, Christian R. Marks , Sam L. Snider, Sarah M. Sturgeon , **William C. Spencer** , Roger J. Colbran , **David M. Miller** and Randy D. Blakely (2017). The Atypical MAP Kinase SWIP-13/ERK8 Regulates Dopamine Transporters Through a Rho-Dependent Mechanism. *J. Neuroscience 37, 9288-9304*. PMID: 28842414.

59. **Barbara M.J. O'Brien, Sierra D. Palumbos, Michaela Novakovic, Xueying Shang, Lakshmi Sundararajan, David M. Miller, III** (2017). Separate transcriptionally regulated pathways specify distinct classes of sister dendrites in a nociceptive neuron. *Developmental Biology 432, 248-257*. PMID: 29031632.

60. Wei Zhou, Xintong Dong, Timothy R. Broederdorf, Ao Shen, Daniel A Kramer, Xing Liang, Rebecca Shi, **David M. Miller, III,** Yang K. Xiang, Ryohei Yasuda, Baoyu Chen, Kang Shen (2018). A multi-protein receptor-ligand complex receptor associated signaling complex synergizes actin regulators to drive F-actin assembly for dendrite branching. *Developmental Cell 45, 362-375*. PMID 29738713

61. Cristina Matthewman, Christina J. Johnson, **David M. Miller, III,** Laura Bianchi. (2018) Functional features of a the "finger" domain of DEG/ENaC channels MEC-4 and UNC-8. *American Journal of Physiology-Cell Physiology 315, C155-C163.* PMID: 29694233

62. Marc Hammarlund, Oliver Hobert, **David M. Miller, III,** Nenad Sestan (2018) The CeNGEN Project: The Complete Gene Expression Map of an Entire Nervous System. *Neuron 99, 430-433*.

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