

Kate M. O'Connor-Giles

Brown University
Department of Neuroscience
Carney Institute for Brain Science
Providence, RI 02912

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Education and Training

Postdoctoral Fellow, 2004-2009
Laboratory of Genetics, University of Wisconsin-Madison
Advisor: Barry Ganetzky

Ph.D. Molecular Genetics, 2003
Washington University School of Medicine
Advisor: James Skeath

Graduate student, 1995-1999
Cell and Structural Biology, University of Illinois at Urbana-Champaign
Advisor: Chris Doe

B.A. Economics, 1991
University of Illinois at Urbana-Champaign

Academic Positions

2022-present	Co-Director Center for the Neurobiology of Cells and Circuits Carney Institute for Brain Science Brown University
2018-present	Provost's Associate Professor of Brain Science Department of Neuroscience Carney Institute for Brain Science Brown University
2016-2018	Associate Professor Laboratories of Genetics & Cell and Molecular Biology University of Wisconsin-Madison
2009-2016	Assistant Professor Laboratories of Genetics & Cell and Molecular Biology University of Wisconsin-Madison

Honors and Awards

2021	NIH NINDS Landis Award for Outstanding Mentorship
2014-2016	McKnight Foundation Technological Innovations in Neuroscience Award
2008-2012	NIH NINDS K99/R00 Pathway to Independence Award
2008	DeLill Nasser Award for Professional Development in Genetics
2004-2007	Jane Coffin Childs Memorial Fund Postdoctoral Fellowship
2002	Spencer T. and Ann W. Olin Medical Scientist Fellow

Society Memberships

Genetics Society of America, Society for Neuroscience, American Society for Cell Biology, AAAS

Publications

Hogan CA*, Gratz SJ*, Dumouchel JL, Delgado A#, Lentini JM#, Madhwani KR#, Thakur RS#, Fu D, **O'Connor-Giles KM**. Expanded tRNA methyltransferase family member TRMT9B regulates synaptic growth and function. bioRxiv preprint. 2022 December. doi.org/10.1101/2022.12.30.522321. In review, EMBO Reports. *#These authors contributed equally.

Tina Ghelani, Marc Escher, Ulrich Thomas, Klara Esch, Janine Lützkendorf, Harald Depner, Marta Maglione, Pierre Parutto, Scott Gratz, Stefanie Ryglewski, Alexander Walter, David Holcman, **Kate O'Connor-Giles**, Martin Heine and Stephan Sigrist. An active zone state switch concentrates and immobilizes voltage-gated Ca²⁺ channels to promote long-term plasticity. Sci Adv. 2023 Feb 17;9(7):eade7804. PMID: PMC9937578.

Calderon, D., R. Blecher-Gonen, X. Huang, S. Secchia, J. Kentro, R.M. Daza, B. Martin, A. Dulja, C. Schaub, C. Trapnell, E. Larschan, **K.M. O'Connor-Giles**, E.E.M. Furlong, and J. Shendure. 2022. The continuum of Drosophila embryonic development at single-cell resolution. Science. Aug 5; 377(6606):eabn5800. doi: 10.1126/science.abn5800

Gratz, S., **O'Connor-Giles, K.M*** and J. Wildonger*. Generating CRISPR alleles in Drosophila. Drosophila Neurobiology: A Laboratory Manual. 2022 In press, Cold Spring Harbor Press. *Co-corresponding authors.

Isabella AJ, Leyva-Díaz E, Kaneko , Gratz SJ, Moens CB, Hobert O, **O'Connor-Giles K**, Thakur R, Sun H. The field of neurogenetics: where it stands and where it is going, GENETICS. 2021 August; 11(8).

Hoover, K. M., Gratz, S. J., Qi, N., Herrmann, K. A., Liu, Y., Perry-Richardson, J. J., Vanderzalm, P. J., **O'Connor-Giles, K. M.** and Broihier, H. T. (2019) The calcium channel subunit alpha2delta-3 organizes synapses via an activity-dependent and autocrine BMP signaling pathway." *Nat Commun* **10**(1): 5575.

Gratz, S.J., Goel, P., Bruckner, J.J., Hernandez, R.X., Khateeb, K., Macleod, G.T., Dickman, D., and **O'Connor-Giles, K.M.** (2019). Endogenous Tagging Reveals Differential Regulation of Ca(2+) Channels at Single Active Zones during Presynaptic Homeostatic Potentiation and Depression. The Journal of Neuroscience 39, 2416-2429.

Featured article, Highlighted in Faculty of 1000

Bier, E., Harrison, M.M., **O'Connor-Giles, K.M.** and Wildonger, J. (2018). Advances in Engineering the Fly Genome with the CRISPR-Cas System. Genetics 208, 1-18.

Bruckner, J.J., Zhan, H., Gratz, S.J., Rao, X., Zilberg, G. and **O'Connor-Giles, K.M.** (2017). Fife organizes synaptic vesicles and calcium channels for high-probability neurotransmitter release. The Journal of Cell Biology 216 (1) 231-246.

Highlighted in Faculty of 1000

Zhan, H., Bruckner, J.J., Zhang, Z. and **O'Connor-Giles, K.M.** (2016). Three-dimensional imaging of *Drosophila* motor synapses reveals ultrastructural organizational patterns. Journal of Neurogenetics 30(3-4):237-246.

O'Connor-Giles, K.M., Zhang, B., Simpson, J.H. and Wu, C.F. (2016). The neurogenetics of Drosophila: the Ganetzky legacy. Journal of Neurogenetics 30(3-4):149-151.

O'Connor-Giles, K. (2016). Toll-tally tubular: A newly identified Toll-like receptor-FoxO pathway regulates dynamics of the neuronal microtubule network. The Journal of Cell Biology 214, 371-373.

Ukken, F.P., Bruckner, J.J., Weir, K.L., Hope, S.J., Sison, S.L., Birschbach, R.M., Hicks, L., Taylor, K.L., Dent, E.W., Gonsalvez, G.B. and **O'Connor-Giles, K.M.** (2016). BAR-SH3 sorting nexins are conserved interacting proteins of Nervous wreck that organize synapses and promote neurotransmission. *Journal of Cell Science* 129, 166-177.

Hicks, L., Liu, G., Ukken, F.P., Lu, S., Bollinger, K.E., **O'Connor-Giles, K.**, and Gonsalvez, G.B. (2015). Depletion or over-expression of Sh3px1 results in dramatic changes in cell morphology. *Biology Open* 4(11):1448-61.

Akbari, B. O., Bellen, H. J., Bier, E., Bullock, S. L., Burt, A., Church, G. M., Cook, K. R., Duchek, P., Edwards, O. R., Esvelt, K. M., Gantz, V. M., Golic, K. G., Gratz, S. J., Harrison, M. M., Hayes, K. R., James, A. A., Kaufman, T. C., Knoblich, J., Malik, H. S., Matthews, K. A., **O'Connor-Giles, K. M.**, Parks, A. L., Perrimon, N., Port, R., Russell, S., Ueda, R., and Wildonger, J. (2015). Safeguarding gene drive experiments in the laboratory. *Science* 349, 927-929.

Gratz, S.J., Rubinstein, C.D., Harrison, M.M., Wildonger, J., and **O'Connor-Giles, K.M.** (2015). CRISPR-Cas9 Genome Editing in Drosophila. *Current Protocols in Molecular Biology* 111, 31.2.1-20.

Kimble, J., Bement, W. M., Chang, Q., Cox, B. L., Drinkwater, N. R., Gourse, R. L., Hoskins, A. A., Huttenlocher, A., Kreeger, P. K., Lambert, P. F., Mailick, M. R., Miyamoto, S., Moss, R. L., **O'Connor-Giles, K. M.**, Roopra, A., Saha, K. and Seidel, H. S. (2015). Strategies from UW-Madison for rescuing biomedical research in the US. *eLife* 4: e09305.

Bruckner, J.J., Zhan, H., and **O'Connor-Giles, K.M.** (2015). Advances in imaging ultrastructure yield new insights into presynaptic biology. *Frontiers in Cellular Neuroscience* 9, 196.

Gratz, S.J., Harrison, M.M., Wildonger, J., and **O'Connor-Giles, K.M.** (2015). Precise Genome Editing of Drosophila with CRISPR RNA-Guided Cas9. *Methods in Molecular Biology* 1311, 335-348.

Harrison, M.M., Jenkins, B.V., **O'Connor-Giles, K.M.**, and Wildonger, J. (2014). A CRISPR view of development. *Genes & Development* 28, 1859-1872.

Gratz, S.J.*, Ukken, F.P.*, Rubinstein, C.D., Thiede, G., Donohue, L.K., Cummings, A.M., and **O'Connor-Giles, K.M.** (2014). Highly specific and efficient CRISPR/Cas9-catalyzed homology-directed repair in Drosophila. *Genetics* 196, 961-971. *These authors contributed equally.

Highlighted in GENETICS 2014 Spotlight

Cited 552 times (Google Scholar through Feb 2021)

Gratz, S.J., Wildonger, J., Harrison, M.M., and **O'Connor-Giles, K.M.** (2013b). CRISPR/Cas9-mediated genome engineering and the promise of designer flies on demand. *Fly* 7, 249-255.

Gratz, S.J., Cummings, A.M., Nguyen, J.N., Hamm, D.C., Donohue, L.K., Harrison, M.M., Wildonger, J., and **O'Connor-Giles, K.M.** (2013). Genome Engineering of Drosophila with the CRISPR RNA-Guided Cas9 Nuclease. *Genetics* 194(4), 1029-1035.

Highlighted in GENETICS 2013 Spotlight, Faculty of 1000

Cited 938 times (Google Scholar through Feb 2021)

Bruckner, J.J.*, Gratz, S.J.*, Slind, J.K., Geske, R.R., Cummings, A.M., Galindo, S.E., Donohue, L.K. and **O'Connor-Giles, K.M.** (2012) Fife, a Drosophila Piccolo-RIM homolog, promotes active zone organization and neurotransmitter release. *The Journal of Neuroscience* 32 (48), 17048-58. *These authors contributed equally.

Babaoglan, A.B., **O'Connor-Giles, K.M.**, Mistry, H. Schickedanz, A., Wilson, B.A. and Skeath, J.B. (2009). Sanpodo: a context-dependent activator and inhibitor of Notch signaling during asymmetric divisions. *Development* 136, 4089-4098.

O'Connor-Giles, K.M. and Ganetzky, B. (2008). Satellite Signaling at Synapses. *Fly* 2(5), 259-261.

O'Connor-Giles, K.M., Ho, L.L. and Ganetzky, B. (2008). Nervous wreck interacts with Thickveins and the endocytic machinery to attenuate retrograde BMP growth signaling during synaptic growth. *Neuron* 58, 507-518.

Eberl, D., Kitamoto, T., Berke, B., **O'Connor-Giles, K.**, Ueda, A., Lee, J., Ruan, H., Engel, J. and Ganetzky, B. (2008). Meeting report: genes, neurons, circuits, and behaviors: highlights of Cold Spring Harbor Meeting on *Drosophila* neurobiology, Oct 3-7, 2007. *Journal of Neurogenetics* 22, 3-13.

O'Connor-Giles, K.M. and Skeath, J.B. (2003) Numb inhibits membrane localization of Sanpodo, a four-pass transmembrane protein, to promote asymmetric divisions in *Drosophila*. *Developmental Cell* 5(2), 231-43.

Highlighted in Nature News and Views, Faculty of 1000

Websites and tools

2014-present Optimal Target Finder
A web tool for identification of CRISPR targets in *Drosophila* and other invertebrates
853K pageviews (through 2022)

2013-present FlyCRISPR
A website for sharing the genome engineering tools and techniques we develop
508K pageviews (through 2022)

Current Grant Support

R01 NS117068 O'Connor-Giles (PI) 3/1/20-2/28/25
NIH/NINDS

Function of TRM9L and tRNA wobble uridine modification in the nervous system

The goal of this project is to understand the role of TRM9-family proteins in nervous system function and oxidative stress response, and how posttranscriptional modification of tRNAs regulates neuronal gene expression.

Effort: 2.4 person months

Direct \$1,339,585 (Annual \$267,917) Total \$1,868,729

2 R01 NS078179 O'Connor-Giles (PI) 12/15/18-11/30/23
NIH/NINDS

Molecular mechanisms of synapse assembly and function

The goal of this project is to build on our advances to understand the mechanisms through which synaptic vesicles and calcium channels are organized at presynaptic terminals to achieve specific release properties.

Effort: 2.4 person months

Direct \$1,142,790 (Annual \$228,558) Total \$1,739,172

R01 NS078179-S1 O'Connor-Giles (PI) 9/1/21-8/31/22
NIH/NINDS

NINDS Landis Award for Outstanding Mentorship by an NINDS Investigator

Direct \$100,000 Total \$159,083

R21NS125864-01 O'Connor-Giles (Co-PI) 9/15/2021-3/14/2024
 NIH/NINDS
 Identification and characterization of chromatin regulators of coordinated synaptic gene expression
 The goal of this award is to determine the role of chromatin regulation in coordinating the expression of pan-neuronal and subtype-specific synaptic genes during synaptogenesis.
 Effort: 0.6 person months
 Direct \$275,000 Total \$429,309

Completed Grant Support

Innovation Award O'Connor-Giles (Co-PI w/ Larschan) 1/1/21-12/31/21
 Identifying drivers of coordinated synaptic gene expression across neuronal subtypes
 The goal of this award is to develop a collaborative project in Drosophila aimed at understanding how gene expression is regulated to coordinate the differentiation of diverse neuronal fates with the acquisition of shared traits.
 Total Award Amount (including Indirect Costs): \$100,000

Innovation Award O'Connor-Giles (Co-PI w/ Kaun) 10/1/18-6/30/20
 Carney Institute for Brain Science
 Understanding contributions of alternative splicing to appetitive memory
 The goal of this project is to investigate the role and distribution of changes in alternative splice form usage associated with alcohol reward through the development of new genome engineering approaches, behavioral analyses, and functional imaging studies.
 Total \$135,000

McKnight Foundation O'Connor-Giles (PI) 8/1/14-7/31/16
 Technological Innovations in Neuroscience Award
 A CRISPR/Cas9 toolkit for comprehensive neural circuit analysis
 Direct \$200,000

R21 NS088830 O'Connor-Giles (PI) 7/1/14-6/30/16
 NIH/NINDS
 CRISPR/Cas9 tools for identifying and manipulating diverse neuronal populations
 Direct \$275,000 Total \$405,795

K99/R00 NS060985 O'Connor-Giles (PI) 7/1/08-6/30/12
 NIH/NINDS
 Regulation of synaptic growth and plasticity in Drosophila
 Direct \$585,281 Total \$835,830

Invited Talks and Platform Presentations

2022 Simons Center for the Social Brain, MIT, Boston, MA
 2021 Neuroscience Seminar Series, Albert Einstein College of Medicine. Postponed due to COVID-19
 2021 iHealth Lecture Series, Florida Atlantic University. Postponed due to COVID-19
 2020 Neuroscience Seminar Series, Florida Atlantic University. Postponed due to COVID-19
 2020 Genetics Seminar, Washington University. Postponed due to COVID-19
 2019 Communication in neural circuits: from genes to synapse formation, function & plasticity
 Neuroscience Colloquium, Charité Universitätsmedizin, Berlin, Germany
 2019 Communication in neural circuits: from genes to synapse formation, function & plasticity
 Developmental, Molecular and Chemical Biology Seminar, Tufts University School of Medicine
 2019 Regulation of presynaptic organization for distinct neurotransmitter release properties
 Giant Synapse Meeting

- 2019 Genetic dissection of synapse formation, function and plasticity
Department of Biology Seminar, University of Rochester
- 2019 Translational regulation in the brain: a role for post-transcriptional modification of tRNAs
Brown Neuroscience Graduate Program In-house Seminar
- 2019 From genes to synapses: mechanistic investigation of neurotransmission
Molecular Pharmacology and Physiology Graduate Program Retreat, Brown University
- 2019 Genetic dissection of synapse formation, function and plasticity
Tata Institute for Genetics and Society Seminar, University of California San Diego
- 2018 Genetic dissection of synapse form and function
Janelia Research Campus
- 2018 Genetic dissection of synapse form and function
Molecular Pharmacology, Physiology & Biotechnology Seminar, Brown University
- 2018 Genetic dissection of synapse form and function
Molecular Biology, Cell Biology and Biochemistry Graduate Program retreat, Brown University
- 2018 The dynamic lives of synapses
Neuroscience graduate program retreat, Brown University
- 2018 Communication in neural circuits: from genes to synapse formation and function
Genetics Institute Seminar Series, University of Florida
- 2017 Communication in neural circuits: from genes to synapse formation, function and plasticity
Pharmacology Seminar Series, University of Minnesota
- 2017 CRISPR approaches for investigating novel neuronal genes in Drosophila
14th Transgenic Technology Meeting
- 2017 Communication in neural circuits: from genes to synapse formation, function and plasticity
Brown Institute for Brain Science Seminar, Brown University
- 2017 The Drosophila CRISPR toolkit
Genome Engineering 5.0, Broad Institute
- 2017 Presynaptic mechanisms for tuning neural communication
Department of Neuroscience Seminar, University of Wisconsin-Madison
- 2017 Genome engineering approaches for investigating novel neuronal genes
Elucidating structure-function relationships at synapses
Cellular and Molecular Biology Training Program Symposium (student invited speaker)
Case Western Reserve University School of Medicine
- 2017 Elucidating structure-function relationships at synapses
Neuroscience Graduate Program Seminar, University of Virginia (student invited speaker)
- 2017 Presynaptic mechanisms for modulating neural communication
Molecular, Cellular, and Developmental Biology Seminar, UC-Santa Barbara
- 2017 Elucidating structure-function relationships at synapses
Department of Cellular Biology and Anatomy Seminar, Augusta University
- 2016 Genome engineering tools for understanding neurons and the genes that determine their functional properties, Genetic Manipulation of Neuronal Activity Conference,
Janelia Research Campus, Howard Hughes Medical Institute
- 2016 Genome engineering in research, medicine, and beyond
Anesthesiology Grand Rounds, University of Wisconsin School of Medicine and Public Health
- 2016 Elucidating structure-function relationships at synapses
Neurogenetics of Drosophila Symposium, University of Wisconsin-Madison
- 2016 Genetic dissection of synapse form and function
Jiao Tong University, Shanghai, China
- 2016 Elucidating structure-function relationships at synapses
Department of Biology Seminar, University of Iowa
- 2016 Genetic dissection of synapse form and function
Genetics Colloquium, University of Wisconsin-Madison

- 2015 Rescuing Research: the search for solutions at UW-Madison
Genetics Training Program Retreat, University of Wisconsin-Madison
- 2015 Genetic dissection of synapse form and function
Genome, Cell and Developmental Biology Seminar, Indiana University
- 2015 Overcoming challenges to efficient CRISPR-based HDR
56th Annual Drosophila Research Conference
- 2014 Genetic dissection of synapse form and function
Molecular, Cellular and Integrative Neurosciences Seminar, Colorado State University
- 2014 Genetic dissection of synapse form and function
Institute of Neuroscience Seminar, University of Oregon
- 2014 Understanding Gene Editing and Making It Work for You
The Scientist Webinar
- 2014 Research tools and technology workshop: CRISPR-mediated genome engineering
Genetics Training Program Retreat, University of Wisconsin-Madison
- 2014 A genetic approach to understanding neural circuit formation and plasticity
Neuroscience Club Student Seminar, Macalester College
- 2014 CRISPR/Cas9-catalyzed homology-directed repair for complex genome engineering
55th Annual Drosophila Research Conference
- 2014 Genetic dissection of neuronal connectivity
Integrative Neuroscience Seminar, University of Illinois-Chicago
- 2013 CRISPR/Cas9 genome editing in Drosophila
Center For Cellular Dynamics Seminar, Pennsylvania State University
- 2013 Generating complex genome modifications via CRISPR RNA-guided Cas9
RNA MaxiGroup, University of Wisconsin-Madison
- 2013 Designer flies on demand: the potential of CRISPR RNA/Cas9-mediated genome engineering
Neurobiology of Drosophila Meeting, Cold Spring Harbor Laboratory
- 2013 A genetic approach to understanding synapse assembly and plasticity
Department of Neuroscience Seminar, University of Wisconsin-Madison
- 2012 The role of Fife, a Drosophila Piccolo-RIM homolog, in active zone organization,
neurotransmission and behavior, NIH
- 2010 Molecular regulation of synapse assembly and number
W. M. Keck Biological Imaging Lecture, University of Wisconsin-Madison
- 2010 Cellular and molecular regulation of synaptogenesis at the Drosophila neuromuscular junction
Anatomy Seminar, University of Wisconsin-Madison
- 2010 The role of PDZ-domain proteins in synapse assembly and function
University of Wisconsin-Madison, Genetics Training Program Retreat
- 2009 Molecular mechanisms of synaptogenesis
FlyGroup, University of Wisconsin-Madison
- 2009 Cellular and molecular mechanisms of synaptic growth
Cell Biology Study Group, University of Wisconsin-Madison
- 2009 Molecular mechanisms of synaptic growth
Neuroscience Seminar, University of Wisconsin-Madison
- 2008 Molecular mechanisms of synaptic growth: insights from the Drosophila neuromuscular junction
Genetics Colloquium, University of Wisconsin-Madison
- 2008 Regulation of synaptic growth: trans-synaptic coordination of form and function
Chaos and Complex Systems Seminar, University of Wisconsin-Madison
- 2007 Nervous wreck interacts with the endocytic machinery to attenuate retrograde BMP growth
signaling during synaptic growth
Neurobiology of Drosophila Meeting, Cold Spring Harbor Laboratory

Trainees

Current Postdoctoral Researchers

Rajan Thakur, 2019-present

Past Postdoctoral Researchers

Scott Gratz, 2015-2018

Currently Research Associate, O'Connor-Giles lab, Brown University

Matthew Sternfeld, 2016-2017

Currently Scientist, Cellular Dynamics, Madison, WI

Hong Zhan, 2014-2018

Currently Postdoctoral Researcher, Ahlquist lab, University of Wisconsin-Madison

Dustin Rubinstein, 2012-2015

Currently Director Translational Genomics Facility, University of Wisconsin Biotechnology Center

Fiona Ukken, 2011-2016

Currently Research Specialist, Carroll lab, University of Maryland, HHMI

Current Graduate Students

Kim Madhwani Neuroscience Graduate Program

Audrey Medeiros Neuroscience Graduate Program

Jenn Dumouchel Therapeutic Sciences Graduate Program

James Kentro Molecular Biology, Cell Biology & Biochemistry Graduate Program

Past Graduate Students

Scott Gratz Genetics Training Program, University of Wisconsin-Madison
Best Poster Award, Genetics Training Program Retreat, 2010
Schlimgen Outstanding Genetics Graduate Student Awardee, 2013
Ph.D, November, 2015
Currently Research Associate, O'Connor-Giles lab

Xiao Rao Cell and Molecular Biology Graduate Program, University of Wisconsin-Madison
M.S., May 2016

Joseph Bruckner Cell and Molecular Biology Graduate Program, University of Wisconsin-Madison
Ph.D., December 2016; CMB Exceptional Thesis Award, 2016
NSF Graduate Research Fellowship Recipient, 2012-2015
CMB Travel Award, 2012 and 2015
Best Talk Award, Cell and Molecular Biology Student Retreat, 2014
Currently Postdoctoral fellow, University of Oregon, Eisen/Washbourne labs

Caley Hogan Genetics Training Program, University of Wisconsin-Madison
Ph.D., January 2020
Currently Scientist, University of Wisconsin-Madison, Wassarman lab

Past Postbaccalaureate Researchers

Kelsey Branchfield PhD 2015, Xin Sun Lab, University of Wisconsin-Madison
Currently Assistant Professor, Medical Director of Cytogenetics and Molecular Genetics, University of Minnesota

Kiah Price 2014-2016
Sara Ríos Méndez 2021-2022
Currently PhD candidate, Brown University

Current Undergraduate Research Students

Leona Hariharan
Carlson Ogata
Joanne Lee
Karen Hernandez
Michael Jia
Liana Lewis
Will Kemball-Cook
Nhu Tran
Sophie Phipps
Sara Santa Cruz
Victoria El-Khoury
Jonathan Herbst

Past Undergraduate Research Students

Alex Cummings B.S. 2012
Genetics Counselor

Samantha Galindo B.S. 2012
Genetics Society of America Victoria Finnerty Awardee, 2012
PhD 2019, Genetics and Development PhD Program, Columbia University
Business Development Manager, Verge Genomics

Sierra Jin B.S. 2012
M.D.

Raymond Chou B.S. 2013
M.D.

Laura Donohue B.S. 2013
PhD 2021, Genetics Graduate Program, Stanford University
Computational Biologist, Synthego Corporation

Ryan Birschbach B.S. 2014
J.D. Candidate, Duke University

Sarah Hope B.S. 2014
Occupational Therapist

Gene Thiede B.S. 2014
Research Technician, USDA

Elizabeth Roeske B.S. 2014
Hilldale Undergraduate Research Fellow, 2013-4
M.D.

Emily Fong B.S. 2015
Disease Management Pharmacist

Nate Carpenter B.S. 2015
M.D. student, Medical College of Wisconsin

Grace Heglund-
Lohman B.S. 2015
J.D. Candidate, Lewis & Clark

Sammi Sison B.S. 2015
Hilldale Undergraduate Research Fellow 2015-6
PhD student, Neuroscience Graduate Program, UCSD

Kurt Weir B.S. 2016
PhD student, Predoctoral Training Program in Human Genetics, Johns Hopkins

Naomi Hollard B.A. 2019 (transferred to Columbia University)
Constituency Director Sunrise Movement

Greg Zilberg B.S. 2017
Ph.D. student, Neuroscience, Icahn School of Medicine at Mount Sinai

Sarah Guagliardo B.S. 2018
PhD candidate, Vanderbilt School of Medicine

Karam Khateeb B.S. 2018
Genetics Society of America Victoria Finnerty Awardee, 2018
Hilldale Undergraduate Research Fellow, 2017-2018
PhD student, Bioengineering, University of Washington, Seattle

Xueyang He B.S. 2019
PhD student, Computational Biology, University of Rochester

Yihong Li B.S. 2019

Ziheng Zhang B.S. 2019
Currently PhD student, Cell & Molecular Biology, University of Wisconsin-Madison

Brian McCrae B.S. 2020
Medical student, Brown University

David Moon Undergraduate student, Computer Science, Brown University

Olivia Kuk B.S. 2021
Hospital volunteer coordinator

Lang Liang B.S. 2022
Currently student, Harvard School of Dental Medicine

Kush Patel B.S. 2022
Health care analyst

Shanzeh Sayied B.S. 2022
Genetics Society of America Victoria Finnerty Awardee, 2022
Currently Clinical Research Assistant, Brown Neurosurgery

Anna-Marie Nolte B.S. 2022
Currently Iditarod dog sled trainer

Summer Research Students

Nicsa Tanco Valcarcel, 2010
Universidad del Este, Carolina, Puerto Rico
UW-Madison Summer Research Opportunities Program

Anna Zeidman, 2013
Brown University
UW-Madison Summer Research Opportunities Program
Currently medical student, Stanford

Marimar Benitez, 2014
University of Puerto Rico, Rio Piedras Campus, San Juan, Puerto Rico
UW-Madison Summer Research Opportunities Program
Currently Phd student, Sloan Kettering

Tatiana Francios, 2022
Community College of Rhode Island
Rhode Island IDEa Network of Biomedical Research Excellence Summer Undergraduate Research Fellowship program

Internships

Constantin Beckers, 2020

MD-Master's student, Julius-Maximilians-University Würzburg

Thesis committees

Lila Gordon, GPP, Taraska lab, 2023-present

Rares Mosneanu, NSGP, Barnea lab, 2022-present

Dominique Pablito, MCB, Larschan lab, 2022-present

Joseph Aguilera, MCB, Larschan lab, 2021-present

Kathleen Carmichael, GPP, Cai lab, 2021-present

Erin Fingleton, GPP, Roche lab, 2021-present

Doudou Yu, MCB, Webb lab, 2020-present

Carlos Toro, TSGP, Aizenman lab, 2020-present

Helen Belato, TSGP, Lisi lab, 2020-present

Tariq Brown, NSGP, Kaun lab, 2019-present

Ryan Castro, NSGP, Valdez lab, 2019-2022

Kavin Nunez, NSGP, Kaun Lab, 2019-2021

Lauren Fish, NSGP, Fallon Lab, 2019-2022

Anthony Crown, MCB, Barnea lab, 2019-present

Hala Haddad, NSGP, Oancea lab, 2019-present

Jamie Catalano, MPP, Kaun lab, 2019-2021

Katie McCullar, NSGP, Kaun lab, 2018-2021

Sara Zeppilli, NSGP, Fleischmann lab, 2018-present

Ben Steyer, BME, Saha lab, 2017-2018 (PhD 2018)

Irina Sedykh, Integrative Biology, Grinblat lab, 2017-2018

Jared Carlson-Stevermer, BME, Saha lab, 2017-2018 (PhD 2018)

Erica Macke, 2017-2018 (PhD 2018)

Raakhee Shankar, CMB, Audhya lab, 2017-2018

Alex Murphy, GTP, Kimble lab, 2016-2018

Harriet Suanders, IPIB, Wildonger lab, 2016-2018

Jennifer Gilbert, GTP, Blum lab, 2016-2018

Randee Young, GTP, Sun lab, 2016-2017

Russ Taylor, NTP, Dent lab, 2016-2018

Edwin A. Suárez Zayas, NTP, Gomez lab, 2015-2017

Nicholas Santistevan, GTP, Wolman lab, 2015-2018

Khalee Marischuk, GTP, Boekhoff-Falk lab, 2015-2018

Ariel Cyrus, GTP, Grinblat lab, 2015-2017

Quentin Sprengelmeyer, GTP, Pool lab, 2015-2018

Erica Schwotzer, GTP, Bashirullah lab, 2015-2018

Thejaswi Nagaraju, PGTP, Sugden lab, 2015-2018

Tabita Kreko, Eaton Lab, UT Health San Antonio, 2015-2017 (PhD 2017)

Jacob Miller, NTP, Halloran lab, 2015-2016

Gulpreet Kaur, CMB, Wassarman lab, 2014-2016

Sihui Yang, CMB, Wildonger lab, 2014-2018

Kendra Taylor, NTP, Dent lab, 2013-2018 (PhD 2018)

Megan Gnazzo, CMB, Skop lab, 2012-2017 (PhD 2017)

Emily Jobe, CMB, Zhao lab, 2012-2016 (PhD 2016)

Kaitlin Dickenson, GTP, Yin lab, 2012-2017 (PhD 2017)

Tristan Lee, NTP, Halloran lab, 2011-2016 (PhD 2016)

Erin Gonzales, CMB, Yin Lab, 2011- 2012 (PhD 2012)

Kelly Pittman, CMB, Skop lab, 2010-2012

Virginia Lamb, GTP, Anderson lab, 2010-2015 (PhD 2015)

Elise Walck-Shannon, GTP, Hardin lab, 2010-2015 (PhD 2015)
Annie Tanenhaus, NTP, Yin Lab, 2010-2014 (PhD 2014)
Olga Ponomareva, NTP, Halloran lab, 2010-2014 (PhD 2014)

Senior Theses

Lang Liang, 2022, Advisor
Shanzeh Sayied, 2022, Advisor
Olivia Kuk, 2021, Advisor
Raffee Wright, 2021, Secondary Advisor

National and International Teaching

2023	Co-director Drosophila Genetics and Genomics Course EMBL, Heidelberg, Germany
2021	Invited lecturer Drosophila Genetics and Genomics Course EMBL, Heidelberg, Germany
Summer 2014, 2016, 2018	Invited lecturer Drosophila Genetics and Genomics Course Wellcome Trust Advanced Courses, Cambridge, U.K.
Spring 2016	Invited lecturer Advanced Genetics, Zhiyuan College Jiao Tong University, Shanghai, China
Summer 2012-2014	Co-director and Instructor Drosophila Neurobiology: Genes, Circuits & Behavior Course Cold Spring Harbor Laboratory, New York
Summer 2009-2011, 2015, 2016	Invited lecturer Neurobiology of Drosophila Course Cold Spring Harbor Laboratory, New York

University Teaching

Brown University

Neuroscience 1530: Communication in the brain: what we know and how we know it
Fall 2020, Fall 2022, Instructor

Neuroscience 2030: Advanced Cellular and Molecular Neurobiology
Fall 2019, Co-Instructor
Fall 2020, Fall 2021, Fall 2022, Guest lecturer (1 week/semester)

Engineering 1931: Social Impact of Emerging Technologies – The Role of Engineers
Fall 2021, Fall 2022, Guest lecturer (1 lecture/semester)

Neuroscience 1020: Principals of Neurobiology
Spring 2020, Guest lecturer (1 lecture)

Neuroscience 1040: Introduction to Neurogenetics
Spring 2022, Guest lecturer (1 lecture)

Neuroscience 2040: Graduate Molecular Neuroscience II: Genes, Circuits and Behavior
Spring 2019, Guest lecturer (1 week)

Neuroscience Graduate Program Ethics & Skills workshop series
Fall 2019, Fall 2020, Fall 2021, Workshop leader (1 workshop/semester)

BioMed Responsible Conduct of Research
Fall 2021, Fall 2022, Guest lecturer (1 lecture/semester)

University of Wisconsin-Madison

Genetics 566: Advanced Genetics Capstone
Co-Instructor, Spring 2011-2018

Genetics 133: Genetics in the News
Co-Instructor, Spring 2016-2018

Genetics 520: Neurogenetics
Guest lecturer, Fall 2017

Neuroscience 765: Developmental Neurobiology
Guest lecturer, Spring 2012, 2013, 2015, 2016, 2018

Biomedical Engineering 619: Microscopy of life
Guest lecturer, Fall 2016

National and International Service

Grant Review

2020	Ad hoc reviewer, Graduate Women in Science National Fellowship Program
2018-2022	Standing member, National Institutes of Health Molecular neurogenetics (MNG) study section
2017	Ad hoc member, National Institutes of Health Molecular neurogenetics (MNG) study section
2016	Mail reviewer, National Institutes of Health Cellular and Molecular Biology of Glia (CMBG) study section
2016	Ad hoc reviewer, National Science Foundation Integrative Organismal Systems
2015	Ad hoc member, National Institutes of Health Neurological Sciences and Disorders (NSD) study section
2015	Ad hoc member, National Institutes of Health Synapses, Cytoskeleton and Trafficking (SYN) study section
2014	Ad hoc member, National Institutes of Health Neurological Sciences and Disorders (NSD) study section
2014	Ad hoc member, National Institutes of Health Neurodifferentiation, Plasticity and Regeneration (NDPR) study section
2012	Ad hoc reviewer, Alzheimer's Society, U.K.

Meeting Organization

2020	Invited Co-chair, Technology & Resources Session The Allied Genetics Conference
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2019	Invited Co-chair, Neurobiology of Drosophila Meeting Cold Spring Harbor Laboratory
2017	Invited Chair, Synaptic Transmission and Plasticity Session Neurobiology of Drosophila Meeting, Cold Spring Harbor Laboratory
2016	Invited Co-chair, Technology and Resources Session The Allied Genetics Conference
2015	Invited Co-chair, Technological Innovations Workshop Neurobiology of Drosophila Meeting, Cold Spring Harbor Laboratory
2015	Invited Co-chair, Novel methods & Genomics Session 24th European Drosophila Research Conference
2015	Co-organizer, Diverse Applications of CRISPR-Cas9 Genome Engineering Workshop, 56 th Annual Drosophila Research Conference
2015	Invited Co-chair, Technology & Resources Session 56 th Annual Drosophila Research Conference
2014	Invited Chair, Synapses in Development and Disease Nanosymposium Society for Neuroscience Annual Meeting
2014	Co-organizer, The Practice and Promise of CRISPR/Cas9-mediated Genome Engineering Workshop, 55 th Annual Drosophila Research Conference

Journal Editorial and Review Service

2021-present	GENETICS, Senior Editor, Experimental technologies & resources section
2020-present	Faculty Opinions Faculty member
2020-present	Neural Development, Editorial Board
2018-2020	GENETICS, Associate Editor
2017-present	Molecular and Cellular Neuroscience, Journal of Experimental Neuroscience, Section Editor

Peer reviewer: Cell Reports, Current Biology, Development, Developmental Biology, Disease Models & Mechanisms, eLife, FLY, Frontiers in Cellular Neuroscience, G3, GENETICS, Genome Biology, Nature, Neural Plasticity, Neuron, PLOS Genetics, PLOS One, PNAS, Scientific Advances, The Journal of Cell Biology, The Journal of Neurogenetics, The Journal of Neuroscience, Trends in Genetics.

University Service

Brown University

2021-present	Advancing Research Careers Steering Committee
2021-present	Neuroscience Graduate Program Seminar Committee
2021-2022	MCB ad hoc tenure committee (2)
2021	School of Engineering Target of Opportunity Faculty Recruiting Committee
2020	Molecular Biology, Cell Biology & Biochemistry Graduate Program admissions committee
2020-present	Brain ExPo Postdoctoral Seminar Series Faculty Advisor
2020	Life Sciences Research Ramp-up Task Force
2019-2021	Brown University Academic Priorities Committee (Vice Chair, 2020-21)
2019-2020	Carney Institute Faculty Recruitment Committee
2019-present	BioMed Junior Faculty Mentoring Program
2019-present	Carney Institute Neurobiology of Cells and Circuits Steering Committee
2019	Carney Institute Innovation Award Review Panel
2018-present	Microscopy Committee, Carney Center for Cells and Circuits & Carney/BITS Center for Translational Neuroscience

University of Wisconsin-Madison

2017-2018	Chair, Cell & Molecular Biology Graduate Program admissions committee
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2017-2018	UW Institute for Clinical and Translational Research Pilot Awards Reviewer
2017	Joint graduate training program CRISPR Workshop
2017	New Faculty Tenure Workshop panel member
2016-17	Wisconsin Institute of Discovery Director search and screen committee
2016-2018	Hilldale undergraduate/faculty research fellowship committee
2016	2016 Genetics Undergraduate Research awards committee
2016	UW2020 grant review
2015-2018	Biotechnology Center Translational Genomic Facility advisory committee
2015	Rescuing US Biomedical Research from its Systemic Flaws: Strategies and Pathways Ahead, leadership committee
2014-2018	Alternate faculty senator
2013-15	Genome Engineering and Editing at UW-Madison advisory committee
2013	Cell & Molecular Biology Advising and Orientation committee
2012-13	Undergraduate advisor, Neurobiology option of the Biology major
2011-12	Neuroscience Training Program Graduate Admissions Committee
2009-10, 2016-17	Cell & Molecular Biology Graduate Program Admissions Committee

Departmental Service

Brown University

2021-present	Chair, Diversity and Inclusion Action Plan Committee
2021-present	Neuroscience Mentoring and Awards Committee
2020-2021	Chair, Neuroscience Graduate Program Admissions Committee
2019-2020	Ad hoc tenure committee
2019-2020	Neuroscience ad hoc Departmental Vision Committee
2019-2021	Neuroscience Diversity and Inclusion Action Plan Committee
2018-present	Neuroscience Undergraduate Curriculum Committee
2019-present	Neuroscience Undergraduate Advising
2019-present	Neuroscience Graduate Program First-Year Advisor

University of Wisconsin-Madison

2016-2018	Chair, Genetics Undergraduate Curriculum Committee
2016-2018	Genetics Training Program Student Advisory Committee
2016	Genetics Outstanding Senior Award Committee
2015-16	Genetics Undergraduate Curriculum Committee
2015	Genetics Preliminary Exam A Committee
2014	Genetics Graduate Awards Committee
2009-12	Genetics Training Program Graduate Admissions Committee

Outreach service

2023	Managing a Lab Group, Collaborations, and Conflicts Workshop, Brown Advancing Research Careers (ARC) program
2023	Mentoring Up Workshop, Brown Building a Resilient Community program
2022	Neuro DUG lab tour
2022	Omics During Development, Carney Methods Meetup
2022	Oral presentation judge, NE Regional SACNAS meeting
2021	CRISPR and the role of gene editing in neuroscience, Carney Conversations, Brown University
2021	Neuroscience DUG advising
2021	Neuroscience DUG faculty-student lunch
2020	CRISPR Workshop, Carney Leadership Alliance Scientific Techniques and Concepts

2020	Guest Lecturer, FAU Summer Integrative Neuroscience Experience REU
2020, 2022	GSA Journals Publishing Q&A panel
2019	Neuro DUG Research lab tours and panel discussion Brown Neuroscience Department Undergraduate Group
2019	Mind Brain Research Day poster judge
2018	Strategies for applying to faculty positions panel Brown Postdocs in Brain Sciences
2016	Wednesday Nite @ the lab public seminar series, Madison, WI A CRISPR future: the promise and potential pitfalls of a powerful new tool for editing genomes
2016	Interviewed by Tianxiao Hong for article in inaugural issue of The Journal of Undergraduate Science and Technology (JUST)
2015-2018	Women in Science and Engineering student dinners and networking events
2015-2018	Interviewed by the Boston Globe, The Scientist, Christian Science Monitor, Quanta Magazine for articles about genome engineering technology and its application in clinical settings and natural populations.
2015	Radio interview with Sevie Kenyon, UW-Madison, about genome engineering
2014	SciMed Graduate Research Scholars Poster Session Judge
2013	MadBiology Boot Camp Mentoring lunch
2011	SciMed Graduate Research Scholars Postdoctoral Fellowship Session Panelist
2011	Wednesday Nite @ Bock Labs open house host
2010-2018	Biosciences Opportunities (BOPS) preview weekend participant
2010, 2015	Wisconsin Institutes of Discovery Town Center Sneak Preview (public demonstrations of our research)
2009-2018	Genetics Undergraduate Association dinners and events