

Ysabel Milton Giraldo

Assistant Professor
Department of Entomology
Neuroscience Graduate Program
University of California, Riverside

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APPOINTMENTS

University of California, Riverside	Assistant Professor	2020-present
California Institute of Technology	NIH NRSA Postdoctoral Fellow Division of Biology and Biological Engineering Advisor: Michael Dickinson	2015-2020
Harvard Medical School	NIH NRSA Postdoctoral Fellow Department of Neurobiology Advisor: Ed Kravitz	2014-2015

EDUCATION

Boston University, Department of Biology	2007-2014 Ph.D.
NIH NRSA Predoctoral Fellow	
Dissertation: Aging brains and social behavior in an invertebrate model: Neuromodulation and neuroanatomy of task attendance across the worker lifespan of the ant <i>Pheidole dentata</i>	
Advisor: James F. A. Traniello	
University of Oklahoma	2005
B.S. in Zoology with Honors (<i>Summa Cum Laude</i>)	
Advisor: Michael Kaspari	

GRANTS (role in bold)

UCR Hellman Fellows Program: Physiology of descending neurons during flight in <i>Drosophila</i>		
PI	\$29,929	2023-present
UC Regents Faculty Fellowship Program: Neural basis of sensory and motor influences on flight direction in fruit flies		
PI	\$5,425	2023-present
UCR HATCH Funds: Exploring impacts of extreme environments on insect locomotion using fruit fly behavioral genetics		
PI	\$33,435	2022-present
BASF: Targeted delivery of active ingredients mediated by nanocarriers		
Collaborator (Total award)	\$180,542	2022-present
PI: Juan Pablo Giraldo (UCR), Collaborator: Tom Perring (UCR)		
UCR Higher Education Emergency Relief Funds (HEERF)	\$40,000	2021

FELLOWSHIPS

NIH NRSA Postdoctoral Fellowship	\$154,662	2014-2017
National Institute of General Medical Sciences NIH		
NRSA Predoctoral Fellowship	\$89,099	2012
National Institute on Aging		
Heiligenberg Student Travel Award	\$700	2012

International Society for Neuroethology		
Boston University Graduate Student Organization Travel Grant	\$500	2012
Sigma Xi, Grants-in-Aid-of Research	\$800, \$600	2010, 2012
Bernard Travel Grant	\$500, \$450	2009, 2011
Dean's Fellowship, Boston University	\$34,930	2007-2008

AWARDS AND HONORS

Belamarich Award for Outstanding Doctoral Dissertation, Dept. of Biology, Boston University		2015
NSF Graduate Research Fellowship, Honorable Mention		2008, 2009
Elected to Phi Beta Kappa		2005

PUBLICATIONS

* undergraduate researcher ** birth surname for Ysabel Giraldo **Peer-reviewed**

publications:

- Giraldo, Y.M.**, Muscedere, M.L., and J.F.A. Traniello. 2021. Eusociality and senescence: Neuroprotection and physiological resilience to aging in insect and mammalian systems. *Frontiers in Cell and Developmental Biology*. 9: 1556.
- Warren, T.M., **Giraldo, Y.M.**, and M. H. Dickinson. 2019. Celestial navigation in *Drosophila*. *Journal of Experimental Biology*. 222: jeb186148.
- Giraldo, Y.M.**, Leitch, K. J., Ros, I. G., Warren, T. L., Weir, P. T., and M. H. Dickinson. 2018. Sun navigation requires compass neurons in *Drosophila*. *Current Biology*. 28 (17): P2845-2852.E4.
- Giraldo, Y.M.**, Rusakov, A.*, Diloreto, A.*, Kordek, A.*, and J.F.A. Traniello. 2016. Age, worksite location, neuromodulators, and task performance in the ant *Pheidole dentata*. *Behavioral Ecology and Sociobiology*. 70: 1441-1445.
- Giraldo, Y.M.**, Kamhi, J.F., Fourcassié, V., Moreau, M., Robson, S.K.A., Rusakov, A.*, Wimberly, L.*, Diloreto, A.*, Kordek, A.*, and J.F.A. Traniello. 2016. Lifespan behavioral and neural resilience in a social insect. *Proceedings of the Royal Society B*. 283 (1822): 20152603.
- Giraldo, Y.M.** and J.F.A. Traniello. 2014. Worker senescence and the sociobiology of aging in ants. *Behavioral Ecology and Sociobiology*. 68 (12): 1901-1919.
- Giraldo, Y.M.**, Patel, E.*, Gronenberg, W., and J.F.A. Traniello. 2013. Division of labor and structural plasticity in an extrinsic serotonergic mushroom body neuron in the ant *Pheidole dentata*. *Neuroscience Letters*. 534: 107-111.
- Russell, J.A., Funaro, C.F., **Giraldo, Y.M.**, Goldman-Huertas, B., Suh, D., Kronauer, D.J.C., Moreau, C.S. and N. E. Pierce. 2012. A veritable menagerie of heritable bacteria from ants, moths, butterflies and beyond. *PLoS ONE* 7(12): e51027.
- Milton, Y.**** and Kaspari, M. 2007. Bottom-up and top-down regulation of decomposition in a tropical forest. *Oecologia* 153: 163-172.

Book Reviews:

- Giraldo, Y.M.** and J.F.A. Traniello 2018. Book review: *The Evolution of Senescence in the Tree of Life*. Edited by Richard P. Shefferson, Owen R. Jones, and Roberto Salguero-Gómez. *Quarterly Review of Biology*. 93 (4): 376-377.

PROFESSIONAL PRESENTATIONS

- Giraldo, Y.M.** Oral Presentation: Heading selection during celestial orientation in *Drosophila*. International Congress of Neuroethology. July 2022. Lisbon, Portugal.
- Giraldo, Y.M.** Oral Presentation: Flying through the world: Measuring translational velocity in the insect brain. Pacific Branch of the Entomological Society of America. Virtual. April 2022. Santa Rosa, CA.

- Giraldo, Y.M.** Leitch, K. J., Ros, I. G., Warren, T. L., Weir, P. T., and M. H. Dickinson. Oral presentation: Neural basis of visually-guided navigation in *Drosophila*. Entomological Society of America. 2020. Virtual.
- Giraldo Y.M.** Oral presentation: Exploring sensory-motor integration in the *Drosophila* central complex. *Drosophila* SoCal Meeting. 2019.
- Giraldo, Y.M.** and M. H. Dickinson. Poster: Exploring sensory-motor integration in the *Drosophila* central complex. Gordon Research Conference, Neuroethology: Behavior, Evolution, & Neurobiology. 2019. Mt. Snow, VT.
- Giraldo, Y.M.** and M. H. Dickinson. Poster: Neural basis of sun compass navigation in *Drosophila*. International Congress of Neuroethology. 2018. Brisbane, Australia.
- Giraldo, Y.M.** and M. H. Dickinson. Oral presentation: Neural basis of sun-like navigation in *Drosophila*. Society for Integrative and Comparative Biology Conference. 2018. San Francisco, CA.
- Giraldo, Y.M.** and M. H. Dickinson. Oral presentation: Celestial navigation in *Drosophila*. Society for Integrative and Comparative Biology Conference. 2017. New Orleans, LA.
- Giraldo, Y.M.**, Rusakov, A.*, Kordek A.*, Diloreto, A.*, Wimberly, L.*, and J.F.A. Traniello. Poster: Aging miniature brains and elderly labor: ant workers do not senesce. Gordon Research Conference, Neuroethology: Behavior, Evolution, & Neurobiology. 2013. Mt. Snow, VT.
- Giraldo, Y.M.**, Rusakov, A.*, Kordek, A.*, and J.F.A. Traniello. Oral presentation: Aging brains and social behavior in an invertebrate model: neuromodulation and neuroanatomy of task attendance across the worker lifespan of the ant *Pheidole dentata*. International Congress of Neuroethology. 2012. College Park, MD.
- Giraldo, Y.M.**, Gronenberg, W., Rusakov, A.*, and J.F.A. Traniello. Poster: Sociality, behavioral performance, and neurosenescence in the ant *Pheidole dentata*. Gordon Research Conference, Neuroethology: Behavior, Evolution, & Neurobiology. 2011. Easton, MA.
- Giraldo, Y.M.**, Wong, A., Rusakov, A.*, and J.F.A. Traniello. Oral presentation: Subcaste and age-related patterns of behavioral development and neurodegeneration in the ant *Pheidole dentata*. International Congress for the International Union for the Study of Social Insects. 2010. Copenhagen, Denmark.
- Giraldo, Y.M.**, Gronenberg, W., and J.F.A. Traniello. Poster: Comparative anatomy of a mushroom body serotonergic neuron in subcastes of the ant *Pheidole dentata*: is there a relationship to division of labor? Annual Meeting of the Entomological Society of America. 2009. Indianapolis, IN.

INVITED SEMINARS

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- Vision and memory in *Drosophila* navigation. Neuroscience Department Seminar. University of Washington, Seattle. Virtual. January 24, 2022.
- Celestial navigation in flies. Neuroscience Department Seminar. Oberlin College. Virtual. July 16, 2021.
- Genetic tools for exploring neuroethology in *Drosophila*. Pacific Branch of the Entomological Society of America. Virtual. April 6, 2021.
- Sun compass navigation in flies. Comparative Physiology seminar. Department of Zoology, University of British Columbia, Vancouver. January 21, 2019.
- Sun compass navigation in *Drosophila*. Departmental seminar, W. M. Keck Science Department. Claremont McKenna College, Pitzer College, and Scripps College, October 5, 2018.
- Neural basis of sun-like navigation in *Drosophila*. Neurolunch: a monthly seminar series for neuroscience labs at Caltech. California Institute of Technology, February 13, 2018.
- Behavioral neurobiology of insect development: from aging ants to cannibalistic *Drosophila* larvae. Belamarich seminar, Boston University, September 21, 2015.
- Neuroanatomical and neurochemical correlates of senescence in the ant *Pheidole dentata*. Sokolowski lab, University of Toronto, August 20, 2014.
- Subcaste and age-related patterns of behavioral development, neuroanatomy, and neurodegeneration in the ant *Pheidole dentata*. Pierce Lab, Harvard University, Dec. 3, 2010.

TEACHING Instructor, UC Riverside

Insect Behavior (enrollment 90)	2021-2023
Introduction to Cellular and Molecular Biology (enrollment 200, 315)	2021, 2022

Co-instructor, Caltech

Biology tutorial: Your Brain on Drugs: Molecules, Neurons and Behavior	2016
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Teaching Fellow, Boston University

Sociobiology	2009-2011
Introductory Biology	2008

RESEARCH MENTORING AND TRAINING Mentor, UC Riverside

Postdoctoral Scholars

Jingzhu Liao	2022-present
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Ph.D. Students

Haneal Pae (Neuroscience)	2021-present
Sushmita Arumugam (Neuroscience)	2022-present

Undergraduates

Ingrid Mejia (Biology, '21)	2021
Victor Lao (Biology, '22)	2021-2022
Keith Pereira (Microbiology)	2021-present
Nicole Yuen (Biology, Honors Thesis)	2022-present

Mentor, CalTech (postdoc)

Rotation graduate students

Francesca Ponce	2017
Alysha de Souza	2015

Undergraduates

Michelle Dan	2018 - present
Crystal Liang	2016

High school student

Aisling Murrin	2017- 2018
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Mentor, Harvard Medical School (postdoc)

Undergraduate

Sophia Lugo	2015
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Mentor, Boston University, PhD

Undergraduates

Alexandria Diloreto	2012-2014	Lindsey Wimberley	2013	Adrianna Kordek
	2011-2012			
Margaret Gosewisch				2011
Ekta Patel				2010-2012

Hena Choudhry 2009-2010
Anna Wong (honors thesis mentor) 2009-2010
Adina Rusakov (honors thesis mentor) 2009-2012

PROFESSIONAL SERVICE

Reviewer for *Nature Communications*, *Journal of Experimental Biology*, *Proceedings of the Royal Society B*, *The Science of Nature*, *Journal of Insect Behavior*, *Journal of Neuroscience Methods*, *Scientific Reports*

Departmental Service

Seminar committee 2020-present
 Chair (2022-2023), member (2020-2022)
Inclusivity Committee 2021-present
 Member
Outreach and Displays committee 2020-present
 Member
Advisory Committee 2022-present

STEM OUTREACH Riverside Insect Fair (UCR)

2022-present

Annual fair held in downtown Riverside, CA
Hands-on demonstrations and activities with fruit flies for children and families ~12,000 attendees each year

Women in Biology (Boston University, PhD) 2009-2013
Graduate student organization to promote women in science
President, Vice President, committee member

BIOBUGS (Boston University, PhD) 2008-2013
Biology Inquiry and Outreach with Boston University Graduate Students
Taught and coordinated one-day labs for Boston-area high school students

Upward Bound (Boston University, PhD) 2010-2013
Graduate student mentor introducing students to laboratory research
College-prep program for underserved Boston-area high school students

PROFESSIONAL SOCIETY MEMBERSHIPS

International Society for Neuroethology
Entomological Society of America
Sigma Xi