Meg A. Younger, Ph.D.

Assistant Professor
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EDUCATION

2007-2013	Ph.D. Neuroscience, University of California, San Francisco, San Francisco, CA
2000-2004	B.S. Neural Science, With Honors, New York University, New York, NY

POSITIONS HELD

2022-present	Assistant Professor, Department of Biology, Boston University, Boston, MA
2022-present	Affiliated Assistant Professor, Biomedical Engineering, Boston University, Boston, MA
2022-present	Faculty Member, Center for Systems Neuroscience, Boston University, Boston, MA
2022-present	Faculty Member, Neurophotonics Center, Boston University, Boston, MA
2014-2021	Postdoctoral Fellow, The Rockefeller University, New York, NY (Lab of Leslie Vosshall)
2014	Grass Fellow in Neuroscience, The Marine Biological Laboratory, Woods Hole, MA
2007-2013	PhD Student, University of California, San Francisco, San Francisco, CA (Lab of Graeme Davis)
2004-2005	Research Assistant, New York University, New York, NY (Lab of Justin Blau)
2001-2004	Undergraduate Researcher, New York University, New York, NY (Lab of Justin Blau)
2001	Undergraduate Researcher, Albert Einstein College of Medicine, New York, NY (Lab of David Spray)

HONORS AND AWARDS

2024-present	Sloan Research Fellow
2023-present	Smith Family Award for Excellence in Biomedical Research
2022-present	Klingenstein-Simons Fellowship Award in Neuroscience
2022-present	Searle Scholar
2018-2020	Kavli Neural Systems Institute Postdoctoral Fellowship
2016	Kavli Neural Systems Institute Pilot Grant
2016-2018	Jane Coffin Childs Postdoctoral Fellow
2015	Leon Levy Neuroscience Fellowship
2014	Grass Fellowship
2014	Krevans Distinguished Dissertation Award Nominee
2012	Gordon Research Conference Poster Prize
2009	Genentech Fellowship
2004	Sherrington Award for Undergraduate Neural Science Research
2004	Charles Barbieri Research Scholar
2004	Phi Beta Kappa Research Prize

PUBLICATIONS

Jialu Bao, Avinash Khandelwal, Laurel Walsh, George Lantz, Santiago Poncio, Laia Capdevila, Yervand Azatian, David Hildebrand, **Meg Younger**, Wei-Chung Lee (2024) “Connectivity supporting carbon dioxide sensitivity in the Aedes aegypti mosquito”. (**In review** at *Science*).

Guerina FV, Patkar AP, and **Younger MA** (2023) “Introduction to Techniques Used to Study Mosquito Neuroanatomy and Neural Circuitry”. *Cold Spring Harbor Protocols*.

Younger MA (2023) “Whole Mount Immunofluorescent Labelling of the Mosquito Central Nervous System”. *Cold Spring Harbor Protocols.*

Younger MA (2023) “Dextran Amine-Conjugated Neural Tracing in Mosquitoes”. *Cold Spring Harbor Protocols*.

Smith EJ, Vizueta J, **Younger MA**, Mullen SP and Traniello JFA (2023) “Dietary diversity, sociality, and the evolution of ant gustation.” *Front Ecol Evol* 11:1175719.

Herre MR*, Goldman OV*, Lu TC, Caballero-Vidal G, Qi Y, Gilbert ZN, Gong Z, Morita T, Rahiel S, Ghaninia M, Ignell R, Matthews BJ, Li H, Vosshall LB, **Younger MA*** (2022) “Non-canonical odor coding in the mosquito.” *Cell* 185 (17): 3104-23. **(*denotes equal contribution)**

- Preprint bioRxiv (2020, 2022); DOI: 10.1101/2020.11.07.368720
- Cell Preview: “Scent of a human: The mosquito olfactory system defies dogma to ensure attraction to humans,” by McLaughlin CN and Luo L DOI: 10.1016/j.cell.2022.07.018
- Featured in “Best of 2022, *Cell*” by CellPress.

Zhao Z, Zung JL, Hinze A, Kriete AL, Iqbal A, **Younger MA**, Matthews BJ, Merhof D, Thiberge S, Ignell R, Strauch M, McBride CS (2022) “Mosquito brains encode unique features of human odour to drive host seeking.” *Nature* 605: 706-712.

- Preprint bioRxiv (2020); DOI: 10.1101/2020.11.01.363861

Matthews BJ*, **Younger MA***, Vosshall LB (2019) “The ion channel *ppk301* controls freshwater egg-laying in the mosquito *Aedes aegypti*,” *Elife* 8:e43963. **(*denotes equal contribution)**

- Preprint bioRxiv; DOI: 10.1101/441592
- Insight Article: “Mosquitos: The taste of water,” by W Daniel Tracey, DOI: 10.7554/eLife.48654
- eLife Digest; DOI: 10.7554/eLife.43963.002

Orr BO, Gorczyca D, **Younger MA**, Jan LY, Jan YN, Davis GW (2017) “Composition and control of a Deg/ENaC channel during presynaptic homeostatic plasticity,” *Cell Reports* 20(8): 1855-66.

Younger MA, Mueller M, Tong A, Pym EC, Davis GW (2013) "A presynaptic ENaC channel drives homeostatic plasticity," *Neuron* 79(6): 1183-96.

Keene AC, Mazzoni EO, Zhen J, **Younger MA**, Yamaguchi S, Blau J, Desplan C, Sprecher SG (2011) "Distinct visual pathways mediate larval light avoidance and circadian clock entrainment." *J Neurosci* 31(17): 6527-34.

Cruikshank SJ, Hopperstad M, **Younger M**, Connors BW, Spray DC, Srinivas M (2004) “Potent Block of Cx36 and Cx50 gap junction channels by mefloquine,” *Proc Natl Acad Sci USA* 101 (33) 12364-69.

RESOURCE DEVELOPMENT

2018 **mosquitobrains.org**
I generated a high-resolution atlas of the *Ae. aegypti* brain and used this to develop an online mosquito neuroanatomy resource. This includes a browser for exploring *Ae. aegypti* neuroanatomy, access to raw data, instructions to warp and register brains onto a standard reference brain, and to generate 3D reconstructions, all using free open-source software.

INVITED LECTURES AND ORAL CONFRENCE PRESENTATIONS

2024 The University of California, San Francisco, Department of Biochemistry Formal Seminar, San Francisco, CA (Invited Seminar)
“Non-Canonical Odor Coding in the Mosquito”

2023 Congress of the Latin American Association of Chemical Ecology, Buenos Aires, Argentina (Invited Keynote Talk)
“Non-Canonical Olfaction in Blood-Drinking Mosquitoes”

2023 Osmocosm: Global Machine Olfaction Conference, Cambridge, MA (Invited Talk)
“Non-Canonical Olfaction”

2023 The University of Chicago, Marine Biological Laboratory, Neural Systems & Behavior Course Seminar Series, Woods Hole, MA (Invited Talk)
“Non-Canonical Olfaction in Blood-Drinking Mosquitoes”

2023 Penn State, Eberly College of Science, Biochemistry and Molecular Biology Seminar Series, University Park, PA (Invited Talk)
“Non-Canonical Olfaction in Blood-Drinking Mosquitoes”

2023 Boston University National Emerging Infectious Diseases Laboratories, Microbiology Seminar Series, Boston, MA (Invited Talk)
“Non-Canonical Olfaction in Disease-Vector Mosquitoes”

2022 MIT, The Molecular and Cellular Neuroscience Seminar Series, Boston, MA (Invited Talk)

"Non-Canonical Olfaction in Blood-Drinking Mosquitoes"

2022 Gordon Research Conference on Molecular and Cellular Neurobiology, Ventura, CA (Talk)
"Non-Canonical Odor Coding in the Mosquito"

2022 Neuro Zoom, Online Neuroscience Seminar Series (Invited Talk)
"Non-Canonical Odor Coding in the Mosquito"

2022 Association for Chemoreception Sciences Annual Meeting, Bonita Springs, Florida (Invited Talk)
"Non-Canonical Odor Coding in the Mosquito"

2022 Formal Seminar, Boston University School of Medicine, Anatomy and Neurobiology Department, Boston, MA (Invited Talk)
"Detection of Humans by Blood-Drinking Mosquitoes"

2021 Brandeis Invited Postdoc Research Colloquium, Brandeis University, (Invited Seminar)
"Detection of Humans by Blood-Drinking Mosquitoes"

2019 Seminars at Yale: Advanced Postdoc Extramural Series, Yale School of Medicine (Invited Seminar)
"In Search of Humans and Water"

2019 *Drosophila* Fly Brain Nomenclature Workshop, Janelia Research Campus (Invited Participant)
Small working group assembled to establish a standard nomenclature for *D. melanogaster* neurons

2018 Gastronauts Summit on Emerging Technologies, Duke University (Invited Talk)
"Processing Human Cues in the Mosquito Brain"

2018 Genetic Modification of Insects Summit, The Rockefeller University (Invited Talk)
"GCaMP Imaging in Non-model Insects"

2017 European Symposium on Insect Taste and Olfaction, Villasimius, Italy (Talk)
"Processing Human Cues in the Mosquito Brain"

TEACHING

2023 Guest Instructor, Neuroscience Communications, BU
2022, 2023 Instructor, Sensory Neurobiology, BU
2022 Guest Instructor, Frontiers in Neuroscience, BU
2022 Guest Lecture, Topics in Neurobiology: Neural Circuits, BU
2022, 2023 Guest Lecture, Neural Systems: Functional Circuit Analysis, BU
2019 Guest Lecturer, Neurogenetics and Behavior, NYU
2019 Guest Lecturer, CSHL Drosophila Neurobiology Course, CSHL
2016, 2018 Guest Instructor, Membrane Biophysics Course, The Rockefeller University
2016 Teaching Assistant, Neurobiology Course, Marine Biological Laboratory, Woods Hole
2015 Lab Instructor, Summer High School Neuroscience Program, The Rockefeller University
2011-2013 Teaching Assistant, Neurobiology Course, Marine Biological Laboratory, Woods Hole, MA
2009 Teaching Assistant, Cell Physiology for Dental Students, UCSF
2009 Guest Lab Instructor, 7th Grade Students, Aptos Middle School, SEP, UCSF
2008 Teaching Assistant, Neuroanatomy Section of Gross Anatomy Lab for Medical Students, UCSF

SERVICE AT BU

2023-2024 Systems Neurobiology Search Committee Member
2023 Kilachand Honors College Co-curricular "Multidisciplinary Perspectives on CRISPR" Panelist
2023 Searle LSO Internal Review Committee
2023 BU Rise Program, Guest Speaker
2023 Achievement Awards Committee, Graduate Program for Neuroscience
2022-2023 Cellular and Molecular Neurobiology Search Committee Member
2022-present Faculty Advisor to Biology Graduate Student Committee
2022-2023 Faculty Host to Artist in Residence (Exhibit April 2023), Seeding the Muse, Boston University Arts Initiative

EXTERNAL SERVICE

2022 Panelist at Power Hour to Discuss Diversity in the Scientific Workplace, Gordon Research Conference on Molecular and Cellular Neurobiology
2022-present Association for Chemoreception Sciences Member

2020-present *Ad hoc* Manuscript Review: Cell Reports, Science Advances, iScience, Microbial Ecology, eLife, Science
2018-2021 Kavli Neural Systems Institute Steering Committee Member, The Rockefeller University
2018-2021 Kavli Neural Systems Institute Grant Review Board, The Rockefeller University
2018-2021 Kavli Neural Systems Institute Mini-symposium Organizer, The Rockefeller University
2015-2018 Neuroscience Seminar Series Planning Committee, The Rockefeller University
2015, 2017 Grass Foundation Grass Fellows Technical Review Board, Marine Biological Laboratory, Woods Hole
2015-2016 NeXXT Fellow: NeXXT pairs women studying in STEM fields with female mentors.

PHD THESIS ADVISORY COMMITTEE MEMBER

2023-present Nasrin Bollmohr, Department of Molecular Life Sciences, University of Zürich, ETH Zürich
2023-present Emily Jordan Smith, Department of Biology, Boston University
2023-present Spencer Beyers, Graduate Program in Neuroscience, Boston University
2023-present Maya Peters Kostman, Department of Biology, Boston University
2023-present Alanna Carey, Department of Biology, Boston University
2022-present Guangmei Liu, Department of Biology, Boston University
2022-present Luke Fournier, Department of Biology, Boston University

SUPERVISED PHD STUDENTS

2023-present Florence Guerina, MCBB, Boston University

SUPERVISED MASTERS STUDENTS

2023-present Garima Kohli, Biology, Boston University

SUPERVISED PHD ROTATION STUDENTS

2024 Phoenix Chen, Biology (Neuro), Boston University
2023 Siyi Zheng, Biomedical Engineering, Boston University
2023 Georgette-Vanelle Wandji, Biology (CM), Boston University
2023 Tiffany Chan, Biology (CM), Boston University
2022 Florence Guerina, MCBB, Boston University
2022 Ameya Patkar, Biology (CM), Boston University
2015 Veronica Jové, The Rockefeller University
2015 Javier Marquina Solis, The Rockefeller University

SUPERVISED UNDERGRADUATE STUDENTS

2023-present Naomi Gonzales, Boston University
2023-present Alexa Woodrow, Boston University
2022 Madison Kim, Boston University
2022 Matthew Boberg, Boston University
2022-2023 Matthew Freitas, Boston University
2022 Sanaa Ahmed, Boston University
2017 Victoria Danan, The Rockefeller University

ADDITIONAL MENTORING

2023-present Wesley Alford, Research Scientist, Younger Lab, Boston University
2023-present Yifan Wang, Postdoc, Younger Lab, Boston University
2023-present Florencia Fernandez-Chiappe, Postdoc, Younger Lab, Boston University
2023-present Shota Weaver, Postbac Researcher, Younger Lab, Boston University
2022-present Darred Surin, Laboratory Manager, Younger Lab, Boston University
2019 Taylor Hart: Graduate student in Daniel Kronauer's lab developing ant neuroimaging.
2015-2017 Alison Ehrlich, Research Assistant, The Rockefeller University
2016-2018 Zachary Gilbert, Research Assistant, The Rockefeller University