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EDUCATION & RESEARCH EXPERIENCE

Postdoctoral Fellow	**Yale University** Advisor: Dr. John R. Carlson Dept. of Molecular, Cellular, & Developmental Biology	2021-present
Ph.D.	**West Virginia University** *"The receptor basis of serotonergic modulation in an olfactory network"* Advisor: Dr. Andrew M. Dacks Dept. of Biology	2014-2021
B.Sc.	**West Virginia University** Major in Biology, Minor in Psychology	2010-2014

International Scientific Training Course Attendance

CSHL Neurobiology of Drosophila: Genes, Brains & Behavior 2018
Cold Spring Harbor Laboratory, Cold Spring Harbor, NY 11724

SCIENTIFIC INTERESTS & PHILOSOPHY

My general research interests are to understand: **(1)** *how is the external world internalized and represented by the brain*; **(2)** *how does the brain generate behavior*; and, **(3)** *what are the general principles of neural flexibility*. To pursue these interests, I combine the genetically-tractable and compact nervous system of *Drosophila*, powerful molecular approaches, as well as innovative approaches for behavioral analysis.

HONORS

Most productive graduate student (WVU Biology Dept.) 2017
Elected member of Sigma Xi, the Scientific Research Society 2015
West Virginia PROMISE award (college tuition scholarship) 2010

PUBLICATIONS

Peer Reviewed Publications

*Jonaitis J, *Mazri MFEB, Hageter JW, Cook OM, **Sizemore TR**, Bennett MM, Ralston JD, Salman F, Fletcher EJ, Matheny DE, Renton J, Ramachandra KL, Horstick EJ, Dacks AM (2025)

Differential modulation of feedforward inhibition reflects topographic organization in the olfactory system. *Nature Communications* **16**, 11165.
*Co-first authors/equal contributors.

- Accompanying Data Repository: https://doi.org/10.17605/OSF.IO/ZYSVP

Sizemore TR, Jonaitis J, and Dacks AM (2023) Heterogeneous receptor expression underlies non-uniform peptidergic modulation of olfaction in *Drosophila*. *Nature Communications* **14**, 5280. doi:10.1038/s41467-023-41012-3.

- Accompanying Data Repository: https://zenodo.org/records/8127341
- Accompanying Code Repository: https://github.com/tsizemo2/Sizemoreetal2023

*Sampson MM, *Myers-Gschweng KM, Hardcastle BJ, Bonanno SL, **Sizemore TR**, Arnold RC, Gao F, Dacks AM, Frye MA, Krantz DE (2020) Serotonergic modulation of visual neurons in *Drosophila melanogaster*. *PLOS Genetics* 16(8):e1009003; doi:10.1371/journal.pgen.1009003.
*Co-first authors/equal contributors.

Sizemore TR, Hurley LM, and Dacks AM (2020) Serotonergic modulation across sensory modalities. *Journal of Neurophysiology* 123(6), 2406-25; doi:10.1152/jn.00034.

Sizemore TR and Dacks AM (2016) Serotonergic modulation differentially targets distinct network elements within the antennal lobe of *Drosophila melanogaster*. *Scientific Reports* 6, 37119; doi:10.1038/srep37119.

Majot AT, **Sizemore TR**, Bandyopadhyay MB, Jozwick LM, and Bidwai AP. 'Protein kinase CK2, a window into the post-translational regulation of the E(spl)/HES repressors from invertebrates and vertebrates.' *Protein Kinase CK2 Cellular Function in Normal and Disease States*. Ed. Khalil Ahmed, Olaf-Georg Issinger, and Ryszard Szyszka:Springer International, 2015. Print.

Non-Peer Reviewed Publications

*Salman F, *Jonaitis J, Ralston JD, Cook OM, Bennett MM, **Sizemore TR**, Ramachandra KL, Coates KE, Fox JL, Dacks AM (2025) Connectivity of serotonin neurons reveals a constrained inhibitory subnetwork within the olfactory system. *bioRxiv* 2025.08.19.671125; doi:10.1101/2025.08.19.671125.
*Co-first authors/equal contributors.

Sizemore TR and Carlson JR (2023) Pain: The agony and the AstC. Dispatch. *Current Biology* 33(12):R695-697; doi:10.1016/j.cub.2023.05.029.

*Jonaitis J, * Mazri MFEB, **Sizemore TR**, Ralston JD, Salman F, Fletcher EJ, Matheny DE, Ramachandra KL, Dacks AM (2023) Stimulus-specific modulation is enabled by differential serotonin receptor expression. *bioRxiv* 546011; doi:10.1101/2023.06.21.546011.
*Co-first authors/equal contributors.

Sizemore TR and Dacks AM (2020) Circadian Clocks: Mosquitoes master the dark side of the room. Dispatch. *Current Biology* 30(16); doi:10.1016/j.cub.2020.06.069.

*Sampson MM, *Myers-Gschweng KM, Hardcastle BJ, Bonanno SL, **Sizemore TR**, Arnold RC, Gao F, Dacks AM, Frye MA, Krantz DE (2020) Serotonergic modulation of visual neurons in *Drosophila melanogaster*. *bioRxiv* 619759; doi:10.1101/619759.
*Co-first authors/equal contributors.

Dacks AM, Auda A, Coates KE, and **Sizemore TR** (2016) A functional atlas of serotonin receptor expression in the antennal lobe. *Chemical Senses* 41(9): E140-E141.

GRANTS & AWARDS

Grants

Doctoral research grant, WVU ECAS ($550) 2016-2019
Grant-In-Aid of Research, Sigma Xi, the Scientific Research Society ($1,750) 2015-2019

Awards

Scientific conference travel award, WVU ECAS ($400) 2018
Most productive graduate student award, WVU Dept. of Biology ($1,000) 2017
Scientific conference travel award, WVU ECAS ($900) 2016

TEACHING EXPERIENCE

University Course Guest Lectures

Department of Biology, West Virginia University, Morgantown, WV
"Big Discoveries in a Tiny Brain", BIOL 474: Neurogenetics and Behavior 2019
"Drosophila Genetics & Behavior", BIOL 298B: Honor's Cell Biology 2018

University Course Teaching

Department of Biology, West Virginia University, Morgantown, WV
Student evaluations of instructor (SEIs) available upon request.
* Solely responsible for preparing all teaching materials, quizzes, and exams.

BIOL 324: Molecular Genetics (BIOL324)#* 2015-2017
BIOL 219: Cellular Biology# 2015
BIOL 298A: Honor's Introductory Biology Add-On# 2015
BIOL 117: Introductory Physiology 2014
BIOL 115: Principles of Biology 2014

University Course Tutoring (Peer-Led Team Learning Leader)

Department of Chemistry, West Virginia University, Morgantown, WV
As an undergraduate, I served as a formal tutor for organic chemistry courses through the chemistry department at West Virginia University. Twice a week I would lead a 2–3-hour question-directed lecture for ~20 students across 2 distinct sections. I used active and team-based learning activities to supplement & solidify concepts from the main course.

CHEM 233: Organic Chemistry 1 2013-2014
CHEM 234: Organic Chemistry 2 2013-2014
CHEM 235: Organic Chemistry 1 Laboratory 2013-2014
CHEM 236: Organic Chemistry 2 Laboratory 2013-2014

MENTORING EXPERIENCE

¶ First generation college student.
* Under-represented minority in STEM.

Graduate students

Bibhu Simkhada (*FlyCROSS* mentee; Anholt & Mackay lab, Clemson University)	2025-present
Malia Miller¶*	2018-2020

Undergraduate students

Savannah Lusk¶*	2016-2017
Ian McCulloch	2015-2016
Scott Arbet¶	2015-2017

SERVICE & OUTREACH

ACADEMIC SERVICE

Ad hoc Scientific Journal Review

eLife	2025
European Journal of Neuroscience	2022

Co-Review Experience (Scientific Journal Review with Supervisor)

Current Biology	2023, 2020
Journal of Neuroscience	2022, 2018
Proceedings of the National Academy of Sciences (PNAS)	2021
Scientific Reports	2019
Cell Reports	2019

International Scientific Training Course Service

Social Media Coordinator, CSHL Neurobiology of *Drosophila*: Genes, Brains & Behavior 2019 - 2024

External Graduate Student Mentorship Program

FlyCROSS mentor, Genetics Society of America (GSA) 2025-present

UNIVERSITY SERVICE

Yale University Service & Outreach Involvement

Exhibit contributor (*SPINELESS*), Yale Peabody Museum, New Haven, CT	2025
"*Meet a Scientist*", virtual Q&A, Middlebury College, Middlebury, VT	2025
"*Genetic inheritance*", guest lecture, Holy Family Academy 7th-grade science, Hazelton, PA	2025
Postdoc Recruitment Event Panelist, virtual Q&A, Office of Postdoc Affairs, Yale University	2024
Alumni career panelist, virtual Q&A, WVU Dept. of Biology	2025, 2022

West Virginia University Service & Outreach Involvement

"*Meet a Scientist*", virtual Q&A, Middlebury College, Middlebury, VT 2021
Graduate school information panelist, virtual Q&A, Florida Atlantic University REU program 2020
Speaker host & coordinator, WVU Dept. of Biology Colloquium Series 2020
Calcium imaging workshop (in vivo & ex vivo preparations), WVU Dept. of Biology 2019
Graduate student peer mentor, WVU Dept. of Biology 2018-2020
Lab Tour Host, *Day of Biology* 2018
Graduate school information panelist, WVU Student Support Services TRiO program 2017
"*Why 17 years? Looking for answers in Cicada Brains*", *Magicicada Day*, WVU Arboretum 2016

COMMUNITY SERVICE & VOLUNTEER WORK

Final Exam Cram, WVU Student Affairs, Morgantown, WV 2014
The Ronald-McDonald House, Morgantown, WV 2012-2014
Logistics Coordinator, Relay for Life at WVU, Morgantown, WV 2013-2014
Residential Construction Volunteer, Habitat for Humanity, Morgantown, WV 2011
Swimming Lessons, YMCA, Beckley, WV 2008-2010

MEDIA-RELATED SCIENCE COMMUNICATION ("PRESS")

"*WVU biologist receives $1.3 million NIH grant to examine fruit flies' olfactory systems*" 2018
News feature detailing the NIH award that I helped craft and that was heavily based on my graduate research.

"*When science and art collide*" 2018
News feature highlighting the confocal microscopy image-based art show I helped curate as a graduate student, as well as my microscopy image contribution to *Interstellate* (see below).

"*Mood Swings*", *Interstellate* 2017
My microscopy images are featured in this collaborative neuroscience-meets-art pictorial magazine.

Student spotlight by the Blanchette Rockefeller Neurosciences Institute 2017
Biographical featurette that describes my personal background and what led to me becoming a neurobiologist.

RESEARCH COMMUNICATIONS

Invited Seminars: External

Virginia Tech, School of Neuroscience 2025

Invited Seminars: Internal (West Virginia University)

Calcium imaging workshop (in vivo & ex vivo preparations), WVU Dept. of Biology 2019
"Genomic Surgery: The CRISPR-Cas System", WVU Dept. of Biology 2014

Oral Conference Presentations

NIH IDeA Southeast Regional Conference, Morgantown, WV 2017

Poster Presentations

Neurobiology of Drosophila Conference, CSHL, NY 2019
Society for Neuroscience, Washington, DC 2017
Neurobiology of Drosophila Conference, CSHL, NY 2017
International Symposium of Olfaction & Taste, Yokohama, Japan 2016
Genetics Society of America: Allied Genetics Conference, Orlando, FL 2016

Conferences Attended Without Presenting

Kavli Institute for Neuroscience 20th Anniversary Symposium, New Haven, CT	2024
NIH BRAIN Initiative Investigators Meeting, Virtual, *via* NIH, MD	2023
ISCE/APACE joint meeting: Frontiers in Chemical Ecology Symposium, Virtual	2022
Neuronal Ensembles, Virtual, *via* Columbia University, NY	2022
Neuromodulation workshop, Virtual, *via* Kavli Institute for Neuroscience at Yale University	2021
Neurobiology of Drosophila Conference, Virtual, *via* CSHL, NY	2021
NIH BRAIN Initiative Investigators Meeting, Virtual, *via* NIH, MD	2021
Internal States of the Brain, Virtual, *via* Picower Institute for Learning & Memory	2020
International Symposium of Olfaction & Taste, Virtual	2020
NIH BRAIN Initiative Investigators Meeting, Virtual, *via* NIH, MD	2020
Brain Circuits, Memory, and Computations workshop, Virtual, *via* Columbia University, NY	2020

PROFESSIONAL MEMBERSHIPS

International Behavioural and Neural Genetics Society	2025-present
Sigma-Xi Scientific Research Society	2023-present
National Postdoctoral Association	2021-present
Flywire Tracing Consortium	2021-present
Full Adult Fly Brain (FAFB) Tracing Consortium	2020-present
Genetics Society of America	2014-present
Society for Neuroscience	2016-2018
Elected member to Sigma-Xi Scientific Research Society	2015
West Virginia University Swimming & Diving Team	2010 - 2013

PROFESSIONAL DEVELOPMENT

Mentoring Workshops

"Perspectives", Constructive Dialogue Institute's Cultivating Conversation Initiative	2025