

Molly Stanley, Ph.D.

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EDUCATION

2017 Ph.D., Neuroscience, Washington University in St. Louis
2012 B.A., Human Biology, University of Kansas, *Highest Distinction*
2012 B.A., Psychology, University of Kansas, *Highest Distinction*

PROFESSIONAL EXPERIENCE

2022-Now Assistant Professor, Department of Biology, University of Vermont
2017-2022 Postdoctoral Research Fellow, Zoology, University of British Columbia
2022-2022 Postdoctoral Teaching Fellow, Zoology, University of British Columbia
2011-2012 Student Research Technician, Pharm. & Tox., University of Kansas

FUNDING & AWARDS

2022 Mentoring Award, Department of Zoology, University of British Columbia
2021 CAN-CIHR-INMHA Brain Star Award
2021 "Best Talk, 2nd Place" award, Canadian Fly Meeting
2020-2021 Trainee Professional Development Award, Society for Neuroscience
2019-2021 D.M. Centre for Brain Health Postdoctoral Trainee Award, UBC
2017 Barbara Jakschik Award, Washington University School of Medicine
2013-2016 National Science Foundation Graduate Research Fellowship DGE-1143954
2014-2016 Markey Pathway in Human Pathobiology Fellowship, WUSTL
2012 Robert Tweed Hersh Memorial Award in Human Biology, Univ. of Kansas
2011 Amgen Scholar (Summer Research Scholar), WUSTL
2009-2012 Psi Chi International Honor Society in Psychology
2007-2011 C.L Burt Geographic Scholarship, University of Kansas

PUBLICATIONS

Preprints:

Grizzanti, J., Moritz, WR., Pait, MC., **Stanley, M.**, Kaye, SD., Carroll, CM., Constantino, NJ., Deitelzweig, LJ., Nicol, N., Snipes, JA., Kellar, D., Caesar, EE., Dhillon, J., Remedi, MS., Karch, CM., Nichols, CG., Holtzman, DM., Macauley, SL. (2022). Kir6.2-containing KATP channels are necessary for glucose dependent increases in amyloid-beta and Alzheimer's-related pathology. *bioRxiv*, <https://doi.org/10.1101/2022.02.20.481215>

Junca, P., **Stanley, M.**, Musso, P-Y., Gordon, MD. (2021). Modulation of taste sensitivity by the olfactory system in *Drosophila*. *bioRxiv*, <https://doi.org/10.1101/2021.03.30.437740>

Macauley, SL., **Stanley, M.**, Caesar, EE., Moritz, WR., Carroll, CM., Day, SM., Baxter, GA., Bice, AR., Cruz-Diaz, N., Grizzanti, J., Mahan, TE., Culver, JP., Remedi, M., Nichols, C., Karch, CM., Cox, L., Diz, D., Bauer, AQ., and Holtzman, DM. (2021). Sulfonylureas target

the neurovascular response to decrease Alzheimer's pathology. *bioRxiv*, <https://doi.org/10.1101/2021.08.11.455969>

Published Research:

McDowell, SAT., **Stanley, M.**, Gordon, MD. (2022). A molecular mechanism for high salt taste in *Drosophila*. *Current Biology*, in press.

Stanley, M., Ghosh, B., Weiss, ZF., Christiaanse, J., Gordon, MD. (2021). Mechanisms of gustatory lactic acid attraction in *Drosophila melanogaster*. *Current Biology*, 31, 1-13.

Jaeger, AH.*, **Stanley, M.***, Weiss, ZF., Musso, P-Y., Chan, RCW., Zhang, H., Feldman-Kiss, D., Gordon, MD. (2018). A complex peripheral code for salt taste in *Drosophila*. *eLife*, 7:e37167.

(* denotes equal authorship)

Andrew, RJ.*, Fernandez, CG.*, **Stanley, M.**, Jiang, H., Nguyen, P., Rice, RC., Buggia-Prevot, V., De Rossi, P., Vetrivel, KS., Lamb, R., Argemi, A., Rathbun, E., Krause, S., Xu, G., Wagner, SL., Parent, AT., Holtzman, DM., Thinakaran, G. (2017). Lack of BACE1 S-palmitoylation reduces amyloid burden and mitigates memory deficits in transgenic mouse model of Alzheimer's disease. *PNAS*, 114(45): E9665-E9674. (* denotes equal authorship)

Stanley, M., Macauley, SL., Caesar, EE., Koscal, LJ., Moritz, W., Robinson, GO., Roh, J., Keyser, J., Jiang, H., & Holtzman, DM. (2016). The effects of peripheral and central high insulin on brain insulin signaling and amyloid-beta in young and old APP/PS1 mice. *The Journal of Neuroscience*, 36(46):11704-11715.

Harris, RA., Tindale, L., Lone, A., Singh, O., Macauley, SL., **Stanley, M.**, Holtzman, DM., Bartha, R., Cumming, RC. (2016). Aerobic Glycolysis in the Frontal Cortex Correlates with Memory Performance in Wild-Type Mice but Not the APP/PS1 Mouse Model of Cerebral Amyloidosis. *The Journal of Neuroscience*, 36(6):1871-78.

Macauley, SL., **Stanley, M.**, Caesar, EE., Yamada, SA., Raichle, ME., Perez, R., Mahan, TE., Sutphen, CL., Holtzman, DM. (2015). Hyperglycemia modulates extracellular amyloid- β concentrations and neuronal activity in vivo. *Journal of Clinical Investigation*, 125(6):2463-7.

Reviews & Commentaries:

Stanley, M., McDowell, SAT., Gordon, MD. (2020). A fly rhodopsin sheds light on thermal taste. *Cell Calcium*, 91:102259.

Stanley, M., Macauley, SL., Holtzman, DM. (2016). Changes in insulin and insulin signaling in Alzheimer's disease: cause or consequence? *Journal of Experimental Medicine*. 213(8):1375-85.

Ising, C., **Stanley, M.**, Holtzman, DM. (2015). Current thinking on the mechanistic basis of Alzheimer's and implications for drug development. *Clinical Pharmacology & Therapeutics*, 98(5):469-71.

Murray, M., **Stanley, M.**, Lugar, HM., Hershey, T. (2013). Hippocampal volume in type 1 diabetes. *US Endocrinology*, 9(2):91-4.

TEACHING

Certificates:

2019: CIRTL Practitioner, University of British Columbia, Postdoc Teaching Internship

2017: CIRTL Associate, Washington University in St. Louis, Teaching Center Program

Instructor / Coursemaster:

2022 BIOL 371 Principles of Neurobiology 1, University of British Columbia

2016 BIOL 4933 Molecular Biology at the Cutting Edge, WUSTL

Guest Lecturer:

2021 COGS 401 Cognitive Systems, University of British Columbia

-Research methods to identify molecular underpinnings of animal behavior

2019-2021 Science 101 (outreach course), University of British Columbia

- Cellular Neuroscience 101

2019 BIOL 260 Fundamentals of Physiology, University of British Columbia

-Integrated function of nervous systems

2017-2018 BIOL 455 Comparative Neurobiology, University of British Columbia

- Neurodegenerative diseases

2015-2017 BIOL 4933 Molecular Biology at the Cutting Edge, WUSTL

-Microdialysis and biosensors for in vivo brain chemical analysis

2015 Neuroscience Summer Course, Priory High School, St. Louis, MO

- Alzheimer's Disease lecture and research lab demonstrations

Teaching Assistant:

2013 BIOL 404 Laboratory of Neurophysiology, WUSTL

2011 BIOL 1012 General Biology Lab for Non-Majors, University of Kansas

MENTORSHIP

As a Postdoc:

2021-2022 Victoria Li, Directed Studies & Technician, University of British Columbia

2019-2020 Nafeesa Alibhai, Undergraduate research, University of British Columbia

2018 Caitlin Main, Undergraduate research, University of British Columbia

2018 Ilya Capralov, Undergraduate research, University of British Columbia

2017 Cariad Knight, Undergraduate research, University of British Columbia

Thesis Committees:

2021 Aleksandra Anoshina, Undergraduate biology honours program

-Examination committee, University of British Columbia

ACADEMIC SERVICE

- 2018-2022 VP Finance, executive member, Postdoctoral Association, UBC
2016-2017 Mentor, NIH Blueprint-ENDURE St. Louis Neuroscience Pipeline
2013-2017 Co-President, executive member, OUTgrads, WUSTL
2015-2017 Program facilitator, SafeZones, WUSTL
2013-2015 Group leader, graduate student grant writing workshops, WUSTL

Society Memberships: Society for Neuroscience, Canadian Association for Neuroscience

Peer reviewer (with supervisors):

Cell, Neuron, Nature Neuroscience, Nature Medicine, Journal of Neuroscience, Journal of Clinical Investigation, Annals of Neurology, PNAS

COMMUNITY SERVICE/OUTREACH

- 2019-2021 Lecturer & volunteer, Science 101 Program, Vancouver, BC
2013-2017 Neuroscience team leader, Young Scientist Program, St. Louis, MO
2012-2017 Presenter & volunteer, Saint Louis Science Center, St. Louis, MO
2012-2013 Volunteer, Youth Exploring Science, St. Louis, MO
2008-2012 Sexual assault survivor advocate, GaDuGi SafeCenter, Lawrence, KS

SEMINARS & PRESENTATIONS

Invited Talks:

- 2021 "Over the rainbow: my journey (so far) as a queer neuroscientist".
Scientific QUEERies Seminar, virtual,
2021 "Mechanisms of lactic acid taste in *Drosophila*".
Comparative Physiology Seminar, University of British Columbia, virtual
2019 "Unique properties of salt taste coding and state-dependent behavioral output in *Drosophila*". *Canadian Association for Neuroscience Meeting, Toronto, ON*

Conference Talks (selected abstracts) :

- 2021 Attractive 'sour' taste: mechanisms of lactic acid gustatory detection".
Canadian Fly Meeting, virtual
2018 "Taste mechanisms of lactic acid attraction in *Drosophila*".
UBC Postdoc Research Day, Vancouver, BC.
2016 "The effects of peripheral and central high insulin on brain insulin signaling and amyloid-beta in young and old APP/PS1 mice".
Society for Neuroscience Meeting, San Diego, CA
2016 "Hyperinsulinemia minimally affects extracellular amyloid-beta *in vivo*".
Knight Alzheimer Disease Research Center Seminar, St. Louis, MO
2014 "Detecting rapid fluctuations in extracellular metabolites *in vivo* with shifting brain activity". *Washington University Neuroscience Retreat, Grafton, IL*

Conference Posters:

- 2021 **Stanley, M.,** Ghosh, B., Weiss, ZF., Christiaanse, J., Gordon, MD. Mechanisms of lactic acid taste in *Drosophila melanogaster*.
Society for Neuroscience Meeting, virtual.
2020 **Stanley, M.,** Ghosh, B., Weiss, ZF., Christiaanse, J., Gordon, MD. Mechanisms of gustatory attraction to lactic acid in *Drosophila melanogaster*.

- International Symposium on Olfaction and Taste, virtual*
- 2016 **Stanley, M.**, Macauley, SL., Caesar, EE., Koscal, LJ., Moritz, WR., Robinson, GO., Roh, J., Jiang, H., and Holtzman, DM. Hyperinsulinemia increases extracellular amyloid-beta in vivo.
Hope Center for Neurological Disorders Annual Retreat, St. Louis, MO
- 2015 **Stanley, M.**, Macauley, SL., Caesar, EE., Robinson, GO., and Holtzman, DM. Hyperinsulinemia modulates extracellular amyloid-beta in vivo.
Society for Neuroscience Meeting, Chicago, IL