

Patricka Williams-Simon

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EDUCATION

University of Missouri, Columbia, MO

Doctoral Student

Dissertation Research: *The Genetic Basis of Learning, Memory, and Thermal Tolerance in a Multi-Parental Population of Fruit Flies.*

Division of Biological Sciences

Advisor: Dr. Elizabeth King

Anticipated graduation: May 2021

University of Missouri, Columbia, MO

PREP (Post-baccalaureate) Scholars Program

Research Project: *Can CRISPR-Cas9 System Mediate T to C Conversion in Exon 7 of Human SMN2?*

Advisor: Dr. Chris Lorson

Completed training: July 2015

Medgar Evers College, Brooklyn, NY

Bachelor of Science in Biology

Senior thesis: *Sensory-Motor Integration of Gill Lateral Cilia in the Bivalve Mollusc*

Advisor: Drs. Edward Captapane and Margarette Carroll

Graduated: June 2013

PUBLICATIONS

In Preparation:

1. **Williams-Simon, P. A.**, Ghidey R., Posey C., Mitchell S., Ng'oma E., Zars T., King E.G. (2020). *The Genetic Basis of Thermal Tolerance in a Multi-Parental Population of Fruit Flies.*

Published:

1. **Williams-Simon P. A.**, Posey C., Mitchell S., Ng'oma E., Zars T., King E.G., 2019. *Multiple genetic loci affect place learning and memory performance in Drosophila*

- melanogaster*. Genes, Brain, and Behavior. doi: 10.1111/gbb.12581.
2. **Williams-Simon Patricka A.**, Mathangi Ganesan, and Elizabeth G. King, 2020. *Learning to Collaborate: Bringing Together Behavior and Quantitative Genomics*. Journal of Neurogenetics.
 3. Ng'oma E, **Williams-Simon PA**, Rahman A, and King EG. (In Press). Diverse biological processes coordinate the transcriptional response to nutritional changes in a *Drosophila melanogaster* multiparent population. BMC Genomics; bioRxiv, doi: <https://doi.org/10.1101/712984>.
 4. Shababi, M., Feng, Z., Villalon, E., Sibigtroth, C.M., Osman, E.Y., Miller, M.R., **Williams-Simon, P.A.**, Lombardi, A., Sass, T.H., Atkinson, A.K., Garcia, M.L., Ko, C.-P., Lorson, C.L., 2016. *Rescue of a Mouse Model of Spinal Muscular Atrophy With Respiratory Distress Type 1 by AAV9-IGHMBP2 Is Dose Dependent*. Molecular Therapy. 24, 855–866. doi:10.1038/mt.2016.33.

PRESENTATIONS

Graduate School, Oral:

1. **Williams-Simon, P. A.**, Ghidey R., Ng'oma E., King E.G., Zars T., *The Genetic Basis of Thermal Tolerance in a Multi-Parental Population of Fruit Flies*. Poster Preview. The Allied Genetics Meeting (TAGC), Virtual Meeting via Zoom. April 2020.
2. **Williams-Simon, P. A.**, Ng'oma E., Posey C, Zars T., King E.G., *Dissecting the Genetic Basis of Learning and Memory in a Multi-Parental Population of Fruit Flies*, Gateway Behavioral Neuroscience Conference. Rolla, MO. September 2019.
3. **Williams-Simon, P. A.**, Ng'oma E., Posey C, Zars T., King E.G., *Dissecting the Genetic Basis of Learning and Memory in a Multi-Parental Population of Fruit Flies*, Animal Behavior Society Meeting. Chicago, IL. July 2019.
4. **Williams-Simon, P. A.**, Posey C, Mitchell S, King E.G., Zars T., *Dissecting the Genetic Basis of Learning, Memory, and Thermal Tolerance in a Multi-Parental Population*. The Evolution Meeting, Portland, OR. June 2017.
5. **Williams-Simon, P. A.**, Posey C, Mitchell S, King E.G., Zars T., *Dissecting the Genetic Basis of Learning, Memory, and Thermal Tolerance in a Multi-Parental Population*. Research and Creative Activities Forum (RCAF), University of Missouri, Columbia, MO. March 2018.

Graduate School, Poster:

6. **Williams-Simon, P. A.**, Ng'oma E., Posey C, Zars T., King E.G., *Dissecting the Genetic Basis of Thermal Tolerance in a Multi-Parental Population of Fruit Flies*. The Allied Genetics Meeting (TAGC), Virtual Meeting via Zoom. April 2020.
7. **Williams-Simon, P. A.**, Ghidey R., Ng'oma E., King E.G., Zars T., *The Genetic Basis of Thermal Tolerance in a Multi-Parental Population*. HHMI Gilliam Fellows Annual Meeting, Howard Hughes Medical Institute, Chevy Chase, MD. September 2019.

8. **Williams-Simon, P. A.**, Ng'oma E., Posey C, Zars T., King E.G., *Dissecting the Genetic Basis of Thermal Tolerance in a Multi-Parental Population of Fruit Flies*. Ecological and Evolutionary Genomics Gordon Research Conference, Manchester, NH. July 2019
9. **Williams-Simon, P. A.**, Ng'oma E., Posey C, Zars T., King E.G., *Dissecting the Genetic Basis of Thermal Tolerance in a Multi-Parental Population of Fruit Flies*. Ecological and Evolutionary Genomics Gordon Research Seminar. Manchester, NH. July 2019.
10. **Williams-Simon, P. A.**, Posey C, Mitchell S, King E.G., Zars T., *Dissecting the Genetic Basis of Learning, Memory, and Thermal Tolerance in a Multi-Parental Population*. HHMI Gilliam Fellows Annual Meeting, Janelia Research Campus, Ashburn, VA. September 2018.
11. **Williams-Simon, P. A.**, Posey C, Mitchell S, King E.G., Zars T., *Dissecting the Genetic Basis of Learning, Memory, and Thermal Tolerance in a Multi-Parental Population*. The Evolution Meeting, Madison, WI. May 2018.
12. **Williams-Simon, P. A.**, Posey C, Mitchell S, King E.G., Zars T., *Dissecting the Genetic Basis of Learning, Memory, and Thermal Tolerance in a Multi-Parental Population*. Population, Evolutionary, and Quantitative Genetics Meeting, Portland, OR. June 2017.
13. **Williams-Simon, P. A.**, Posey C, Mitchell S, King E.G., Zars T., *Dissecting the Genetic Basis of Learning, Memory, and Thermal Tolerance in a Multi-Parental Population*. Neuroscience Seminar, University of Missouri, Columbia, MO. May 2017.
14. **Williams-Simon, P. A.**, Posey C, Mitchell S, King E.G., Zars T., *Dissecting the Genetic Basis of Learning, Memory, and Thermal Tolerance in a Multi-Parental Population*. Eco-Lunch, University of Missouri, Columbia, MO. March 2017.
15. **Williams-Simon, P.A.**, Posey C, Mitchell S, King E.G., Zars T., *Dissecting the Genetic Basis of Learning, Memory and Thermal Tolerance in Fruit Flies*. The Allied Genetics Conference (TAGC), Orlando, FL. June 2016.

PREP Scholar:

Restoration of Full Length SMN to Astrocytes Improves the SMA Phenotype in SMN Δ 7 Mice

1. Families of SMA Research Conference, June 2014
2. Phi Zeta Research Day, University of Missouri, May 2014
3. Missouri Life Sciences Week, University of Missouri, Apr 2014 – **Honorable Mention**

Medgar Evers College:

Sensory Motor Integration of Gill Lateral Cilia in the Bivalve Mollusc

1. Experimental Biology Conference, Boston, May 2013
2. Society of Integrative and Comparative Biology (SICB), Jan 2013
3. Annual Biomedical Research Conference for Minority Students, San Jose Oct 2012

4. Metropolitan Association of College and University Biologists (MACUB) conference, New York, Oct 2012
5. Undergraduate Research Symposium at the University of Maryland Baltimore County (UNBC), Maryland, Oct 2012

BROADER IMPACTS AND OUTREACH

1. Co-Founder of the *Troy Zars Stepping into Science* Program. An initiative that gives high school students of color in the Columbia, MO area an opportunity to shadow an underrepresented graduate student while conducting research in the STEM field. Summer 2019
2. Co-organizer of a workshop for underrepresented graduate students on how to effectively mentor underrepresented undergraduates and high schoolers. Feb 2019
3. Co-founder and organizer of *Bound for Graduate School*, a seminar for Sophomore and junior underrepresented undergraduate students on how to effectively apply to graduate school. Every Spring semester since 2018
4. Co-founder and organizer of *Hit the Ground Running*, a seminar for first-year underrepresented graduate students on how to acclimate to graduate school at Mizzou and living in Columbia, MO. Every Fall semester since 2017
5. Graduate Student Recruiter at the Annual Biomedical Research Conference for Minority Students (ABRCMS). Nov 2017 (Phoenix, AZ) and Nov 2018 (Indianapolis, IN)
6. STEM Cubs Biology Teacher. STEM Cubs is a Saturday camp that targets title 1 school students from K-5th. Summer 2018 and Fall 2018
7. Founding President of *Minorities in STEM* (Mi-STEM). Mi-STEM creates a space for underrepresented graduate students and postdoctoral fellows for social networking and professional development. Spring 2016

MENTORING

1. Ariona Booker, Mary Butler, Giselle Campos, MOLSAMP Scholars, Summer 2020
2. Ronel Ghidey, IMSD Scholar and Undergraduate Researcher, Spring 2018 – Spring 2020
3. Kaija Caldwell, CASE Scholar, Spring 2019
4. Monet Nichols, Nursing School Student, Spring 2019
5. Chris Posey, Undergraduate Researcher, Fall 2016 – Spring 2018
6. Samuel Mitchell, Undergraduate Researcher, Fall 2015 – Spring 2017

HONORS, AWARDS, AND FELLOWSHIPS

University of Missouri:

1. The Genetics Society, DeLill Nasser Award Recipient, 2020
2. Gordon Research Conference Carl Storm Fellowship, 2019
3. Ethel Sue Lumb Award for Excellence in Graduate Studies, 2019

4. HHMI Gilliam Fellow, 2018 – Present
5. 3rd Place Poster Award at Missouri Life Sciences Week, 2018
6. Graduate Research Assistantship, NSF Grant, 2017
7. 1st Place Oral Presentation Research and Creative Activities Forum, 2018
8. Initiative for Maximizing Student Development (IMSD) fellow, 2015 – 2017
9. National Institute of Health (NIH) PREP Scholar, 2013 – 2015
10. Honorable Mention at Missouri Life Sciences Week, 2014

Medgar Evers College:

1. Experimental Biology, **FASEB MARC Program Travel Award**, 2013
2. Society of Integrative and Comparative Biology **Travel Award**, 2013
3. Undergraduate Research Symposium at the University of Maryland Baltimore County (UNBC), **2nd Place Poster Presentation**, 2012
4. Metropolitan Association of College and University Biologists (MACUB) Conference, **1st Place Poster Presentation**, 2012
5. **Dean's list**: 2012

TEACHING EXPERIENCE

1. Genetics Laboratory, University of Missouri, Fall 2020
2. The Human Microbiome - Writing Intensive, University of Missouri, Summer 2020
3. Evolution, University of Missouri, Spring 2020
4. Introduction to Biology, University of Missouri, Spring 2018

INVITED SPEAKER

1. What's Research Graduate student panelist for McNair Students, Dec 2018
2. Missouri Louis Stokes Alliance for Minority Participation (MoLSAMP), graduate student panel speaker, University of Missouri St. Louis, MO. July 2018
3. Missouri Louis Stokes Alliance for Minority Participation (MoLSAMP), graduate student panel speaker, St. Louis, MO. March 2018

TRAINING AND WORKSHOPS

1. Software Carpentry Workshop, University of Missouri, March 2020
2. How to effectively mentoring an underrepresented student, February 2019
3. Social justice Mediation Training, Jan 2018
4. Graduate Student Leadership and Development Program (GSLDP), University of Missouri System, 2017 cohort
5. Software Carpentry Workshop, University of Missouri, November 2017

6. Workshop in Inclusion, Diversity and Equity, September 2017

MEMBERSHIPS IN SCHOLASTIC/ RESEARCH HONORARY ORGANIZATIONS

1. Minorities in STEM, MI-STEM, Founding President, University of Missouri, 2016-Present
2. Graduate Student Leadership and Development Program (GSLDP), University of Missouri System, 2017
3. Graduate Student Ambassador for the University of Missouri Graduate School, Spring 2018
4. Medgar Evers Science Association, Medgar Evers College, May 2012 – June 2013
5. New York State Education Department-sponsored Science CSTEP, Medgar Evers College, May 2012 – June 2013
6. National Science Foundation (NSF) sponsored STEP into Science, Medgar Evers College, May 2012 – June 2013

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

1. Animal Behavior Society, member since 2019
2. Society for the Study of Evolution, member since 2017
3. Genetics Society of America, member since 2016