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Education

2014 Ph.D. Biology, University of Washington
2014 Certificate of Law, International Bioethics, Social Justice and Health, University of Washington, School of Law
2006 B.S. Molecular, Cellular and Developmental Biology, University of Washington
2006 B.S. Neurobiology, University of Washington
2001-2003 Post-Secondary Options Program, Biology, Ohio University

Research Experience

2019-2021 Assistant Professor of Biology, General Faculty, Research Track, University of Virginia
2017-2019 Research Associate, Department of Biology, University of Virginia
2016-2017 Research Scientist III, Department of Biology, University of Washington
2015-2016 Post-Doctoral Fellow, Basic Science Division, Fred Hutchinson Cancer Research Center
PI: Katie Peichel
Evolution of adult neurogenesis and behavior in stickleback fish
2008-2014 Ph.D., University of Washington, Department of Biology
Major Professor: Eliot Brenowitz
Dissertation title: "Adult neurogenesis in songbirds, from cellular and molecular mechanisms to behavior"
2008 Research Engineer, University of Washington, Department of Biology
PI: Horacio de la Iglesia
Role of circadian rhythms in mood disorders
2007-2008 Research Engineer, University of Washington, Department of Biology
PI: David Parichy
Post-embryonic neural crest lineages in zebrafish (glia, bone)
2004-2006 Undergraduate Researcher, University of Washington, Department of Biology
Mentor: Horacio de la Iglesia
Cloning and expression of circadian clock gene homologs in crustaceans

Fellowships and Grants

Awarded

2020 Program Grant, Directors of Diversity and Inclusion, University of Virginia (\$10,000)
2015-2016 NIH NRSA T32 DC005361, Auditory Neuroscience Training Grant, University of Washington (\$42,000)
2014 Washington Research Foundation Hall Fellowship, University of Washington

- (\$10,600+tuition)
- 2010-2013 NIH NRSA T32 GM007270, Cell and Molecular Biology Training Grant, University of Washington (\$72,200+tuition)
- 2009-2010 NIH NRSA T32 DC005361, Auditory Neuroscience Training Grant, University of Washington (\$18,600+tuition)
- 2005 Arts & Sciences Research Fellowship, University of Washington (\$1,500)
- 2004-2005 Mary Gates Research Endowment, Mary Gates Foundation (\$4,500)
- 2004 Howard Hughes Research Fellowship, Howard Hughes Medical Institute (\$3,000)
- 2004 Mary Gates Research Endowment, Mary Gates Foundation (\$2,500)

Submitted

- 2020 (Submitted Letter of Intent) Research Grant, Whitehall Foundation, Inc. (three year grant for up to \$300,000)
- 2019 Letter of Intent, Packard Fellowship for Science and Engineering, The David & Lucile Packard Foundation (application not forwarded to sponsor due to inadequate job title of Research Assistant Professor)
- 2018 Letter of Intent, Research Grant, Whitehall Foundation, Inc. (application not forwarded to sponsor due to inadequate job title of Research Assistant)

Publications

Peer Reviewed Articles

- Larson TA*, Tokareva Y[†], Meritt Cole M[†], Brenowitz EA. (2020) Inflammation induced by natural neuronal death and LPS regulates neural progenitor cell proliferation in the healthy adult brain. *eNeuro* doi:10.1523/ENEURO.0023-20.2020
- Lewis VM, Saunders LM, Larson TA, Bain EJ, Sturiale SL, Gur D, Chowdhury S, Flynn JD, Allen MC, Deheyn DD, Lee JC, Simon JA, Lippincott-Schwartz J, Raible DW, Parichy DM (2019) Fate plasticity and reprogramming in genetically distinct populations of Danio leucophores. *Proceedings of the National Academy of Sciences USA* doi:pnas.1901021116.
- Larson TA*, Thatra NM[†], Hou D[†], Hu RA[†], Brenowitz EA. (2018) Seasonal changes in neuronal turnover in a forebrain nucleus in adult songbirds. *The Journal of Comparative Neurology* 1–13.
- Ben Hamo M, Larson T, Duge L, Sikkema C, Wilkinson CW, de la Iglesia H, González M. (2016) Circadian forced desynchrony of the master clock leads to phenotypic manifestation of depression in rats. *eNeuro* doi:10.1523/ENEURO.0237-16.2016
- Larson TA, Lent KL, Bamler TK, MacDonald JW, Wood WE, Caras ML, Thatra NM[†], Budzillo A, Perkel DJ, Brenowitz EA (2015) Network analysis of microRNA and mRNA dynamics in a highly plastic sensorimotor neural circuit. *BMC Genomics* 16: 905 doi:10.1186/s12864-015-2175-z
- Larson TA, Thatra NM[†], Lee B[†], Brenowitz EA. (2014) Reactive neurogenesis in response to naturally occurring apoptosis in an adult brain. *The Journal of Neuroscience* 34(39): 13066-76 doi:10.1523/JNEUROSCI.3316-13.2014 PMID: [25253853](#)
- Larson TA, Wang TW, Gale SD, Miller KE, Thatra NM[†], Caras ML, Perkel DJ, Brenowitz EA (2013) Postsynaptic neural activity regulates neuronal addition in the adult avian song control system. *Proceedings of the National Academy of Sciences USA* 110 (41): 16640-44 doi:10.1073/pnas.1310237110, PMID: [24062453](#)
- Larson TA, Gordon TN, Lau EM, Parichy DM. (2010) Defective adult oligodendrocyte and Schwann cell development, pigment pattern, and craniofacial morphology in *puma* mutant zebrafish having an alpha tubulin mutation. *Developmental Biology* 346(2): 296-309 doi:10.1016/j.ydbio.2010.07.035 PMID: [20692250](#)

Invited Articles, Book Chapters, and Reports

- Larson TA*. Cell death in the avian brain with emphasis on the development and plasticity of the song control system. (2020) "Cell Death Regulation In Health And Disease." **International Review of Cell and Molecular Biology**. 352:83-113 doi:10.1016/bs.ircmb.2020.01.001
- Larson TA*. Sex steroids, adult neurogenesis, and inflammation in CNS homeostasis, degeneration, and repair. (2018) **Frontiers of Endocrinology**. 9:205 doi:10.3389/fendo.2018.00205
- Brenowitz EA & Larson TA. (2015) Neurogenesis in the Adult Avian Song Control System. **Cold Spring Harbor Perspectives in Biology** 7(6):a019000. Advance for "Neurogenesis." 2nd edition. Gage, Kemperman, and Song. Cold Spring Harbor Press. doi:10.1101/cshperspect.a019000

Abstracts, Supplements, and Commentaries

- Larson TA*, Tokareva Y[†], Meritt Cole M[†], Brenowitz EA. (2020) Development of a novel model: Using songbirds to elucidate the pro-neurogenic role of microglia in healthy and natural neurodegenerative states. **Journal of Immunology**. 204 (1 Supplement): 159.38-159.38.

*Corresponding author

[†] Mentored student

Manuscripts

- Hou D[†], Brenowitz EA, Larson TA*. Daily rhythmic changes in singing behavior of Gambel's white-crowned sparrow. In prep for *Animal Behaviour*
- Larson TA, Lima M, Cole MM[†], Brenowitz EA, Cohen R. The seasonal deconstruction and reconstruction of an adult sensorimotor neural circuit. In prep for *Hormones and Behavior*

* Corresponding author

[†] Mentored student

Press Coverage

- [Phys.org](#). (2019) [Researchers discover cells that change their identity during normal development](#)
- [Neuroscience News](#). (2019) [Researchers discover cells that change their identity during normal development](#)
- Newseditor, *Science Mission*. (2019) [Cells that change their identity during normal development identified!](#)
- S Hines, *University of Washington News and Information*. (2014) [Dying brain cells cue new brain cells to grow in songbird](#)
- T Dubnicoff, *California Institute of Regenerative Medicine*. (2014) [The sparrow's dying song: a possible path toward natural, stem cell-based repair of human brain diseases.](#)
- C Griffith, *Science World Report*. (2014) [New brain cells grown in songbirds each year: Neuron growth investigated](#)
- S Hines, *Futurity*. (2014) [Do dying neurons tell bird brains to regenerate?](#)
- K Nayan, *Counsel & Heal*. (2014) [Dying brain cells cue new brain cells to grow in songbird, study finds](#)
- O Nunez, *Design & Trend*. (2014) [Regenerating brain neurons help birds sing better during breeding season](#)

Three Sentence Science. (2014) [Dying brain cells cue up new ones in songbirds](#)
lans, *ZeeNews*, India. (2014) [Dying cells send signal to stimulate new cells in birds](#)

Honors and Awards

2015	Finalist, Council of Graduate Schools' Distinguished Dissertation Award, National Competition, Biological & Life Sciences Category (one of eight finalists)
2015	University of Washington's Nominee, Council of Graduate Schools' Distinguished Dissertation Award, National Competition, Biological & Life Sciences Category
2015	Distinguished Dissertation Award for Biological Sciences, University of Washington (1 awarded per year among all UW Ph.D. recipients)
2014	Undergraduate Research Mentor Award, University of Washington (5-6 awarded each year among all UW faculty, staff, and students)
2013	Travel Award, Department of Biology, University of Washington (\$350)
2012	Travel Award, Department of Biology, University of Washington (\$400)
2009	Honorable Mention, NSF Graduate Research Fellowship Program
2006	1 st Place Poster Winner, Woodland Park Zoo Research Meeting
2006	Wildlife Care Aid of the Month, Progressive Animal Welfare Society

Seminars, Symposia, and Conferences

Invited Seminars and Symposia

2021	Department of Biology, University of Virginia, Charlottesville, VA, "Mechanisms of Adult Neurogenesis in the Avian Song Circuit"
2016	Department of Biology, University of Virginia, Charlottesville, VA, "Dynamics and mechanisms of Adult Neurogenesis in the Avian Song Circuit"
2015	Department of Integrative Biology, University of Texas - Austin, "Processes and mechanisms of adult neurogenesis in songbirds and stickleback"
2014	Annual University of Washington - South Lake Union Research Symposium, Seattle WA, "Natural reactive neurogenesis in the avian brain"

Oral Presentations

2016	Junior Scientist Workshop on 'Genetic and Neurobiological Basis for Evolution of Behavior,' HHMI Janelia Farm, "From evolution to behavior: adult neurogenesis in the threespine stickleback"
2014	Graduate Student Symposium, University of Washington, "Natural reactive neurogenesis in the avian brain: a powerful model for regenerative neurogenesis"
2011	Graduate Student Symposium, University of Washington, "Efferent neural activity regulates adult neuronal recruitment"
2008	Graduate Student Symposium, University of Washington, "Desynchronized rat as a model for mood disorders"
2005	Mary Gates Undergraduate Research Symposium, "Crustacean circadian rhythmicity"
2004	Friday Harbor Research Apprentice Symposium, "In search of clock neurons in decapod crustaceans"

Poster Presentations

2020 (Canceled)	American Association of Immunologists Annual Meeting, Honolulu, HI
2017	Society for Neuroscience Annual Meeting, Washington D.C.
2016	Junior Scientist Workshop on 'Genetic and Neurobiological Basis for Evolution of Behavior,' Janelia Research Campus
2015	International Conference on Stickleback Behavior and Evolution, Stony Brook NY

2013 Society for Neuroscience Annual Meeting, San Diego CA
2013 Society for Neuroscience Annual Meeting, San Diego CA
2012 Society for Developmental Biology Northwest Meeting, Friday Harbor WA,
2012 Society for Neuroscience Annual Meeting, New Orleans LA
2011 Society for Neuroscience Annual Meeting, Washington DC
2008 Zebrafish Development and Genetics, Madison WI
2006 Society for Neuroscience Annual Meeting, Atlanta GA
2006 Mary Gates Undergraduate Research Symposium, Seattle WA
2006 Woodland Park Zoo Research Meeting, Seattle WA; *awarded - Best Poster*

Attended

2019 From Behavior to Brain: The Neuroethological Way to Neuroscience, Society for Neuroscience, Virtual Conference
2011 Clinical Neuroscience and Society Conference, Philadelphia PA
2011 Annual Meeting of the International Neuroethics Society, Washington DC
2010 Annual Meeting of the Neuroethics Society, San Diego CA
2010 Society for Neuroscience Annual Meeting, San Diego CA
2009 Annual Society for Bioethics and Humanities Meeting, Washington DC

Teaching Experience

Courses

2009 Teaching Assistant, Biology 418, Biological Rhythms, University of Washington
2009 Teaching Assistant, Biology 350, Physiology, University of Washington
2008 Teaching Assistant, Biology 200, Introductory Biology, University of Washington

Guest Lectures

2019 Habits of Highly Effective Graduate Students (Biol8270), University of Virginia

Mentoring

Graduate Students

2020 (current) Abril Goana Gamboa, Rotation Student, Biology, University of Virginia
2018-2020 Malgorzata Gazda, Visiting Scholar from CIBIO, Universidade do Porto
2014 Kali Esancy, Rotation Student, Brenowitz Lab, University of Washington
2013 Lisa Voelker, Rotation Student, Brenowitz Lab, University of Washington
2012 Eric Thomas, Rotation Student, Brenowitz Lab, University of Washington
2008 Fabio Everton Maciel, Visiting Scholar, Universidade Federal de Rio Grande

Undergraduate Students

2021 (current) Kathryn Chung, University of Virginia
2021 (current) Rylan Pearsall, University of Virginia
2021 (current) James Navarro, University of Virginia
2020 (current) Colleen Mullins, Echol's Scholar, University of Virginia
2020 (current) John Boyd, Echol's Scholar, University of Virginia
2020 (current) Elizabeth Scalzi, University of Virginia
Funding: Neuroscience Summer Research Fellowship, UVA Brain Institute
2020 Sreya Kunapuli, Echol's Scholar, University of Virginia
2019 (current) Caroline Luscko, University of Virginia
Funding: Schwager Summer Research Scholarship, UVA Biology
2017-2019 Margo Downes, University of Virginia
Publications: 1 in prep

2018-2019 Alice Clair, University of Virginia
 2018-2019 Allyssa Cochrane, University of Virginia
Publications: 1 in prep

2017-2019 Yasmeeen Refai, Echol's Scholar, University of Virginia
 2017-2018 Avani Casey, University of Virginia
 2016-2017 Avery Pong, University of Washington
 2016-2017 Rachael Hu, University of Washington
Publications: 1
Presentations: SFN, Biology Undergraduate Research Symposium, UW

2016-2017 Brian Setijono, University of Washington
 2016-2017 Yekaterina 'Kate' Tokareva, University of Washington
Publications: 2
Posters: Biology Undergraduate Research Symposium, UW

2015-2017 Yuchen 'Kristine' Sun, University of Washington
 2014-2015 Marianne Cole, University of Washington
Publications: 2 and 1 in prep
Presentations: Mary Gates Research Symposium, UW

2013-2015 Darren Hou, University of Washington (started as high school student)
Publications : 1 and 1 in prep
Presentations: Mary Gates Research Symposium, UW

2011-2012 Brian Lee, Johns Hopkins University
Publications: 1

2010-2014 Nivretta Thatra, University of Washington (started as high school student)
Awards: Mary Gates Research Fellowship (2), Sargent Award
Posters: Biology Undergraduate Research Symposium, UW; Mary Gates Research Symposium, UW; Society for Neuroscience, San Diego
Presentations: Mary Gates Research Symposium, UW (2)
Publications: 4

2010-2011 Matt Shapiro, University of Washington
Awards: Mary Gates Research Fellowship, UW
Posters: Mary Gates Research Symposium, UW

High School Students

2015-2016 Favor Orji, Technology Access Foundation Academy, WA
 Designing and conducting research on role of thyroid hormone in neural development and adult neurogenesis
Science Fairs: TAF Science Fair, First Place Senior Division, First Place Overall; Central Sound Regional Science Fair, Third Place Medicine and Health Category; Washington State Science and Engineering Fair, First Place Senior Division, WA NASA Space Grant Consortium Recipient, Wolfram Research Inc. Mathematica Software Award; ACT-SO Competition, First Place Health and Medicine Category, National Competition Qualifier

2012-2013 Darren Hou, Interlake High School, WA
 Behavioral analyses

2010-2011 Hamdi Malin, Cleveland High School, WA
 College applications and financial aid

2009-2010 Nivretta Thatra, Bellevue High School, WA
 Designing and conducting research in neurobiology and behavior

2008-2010 Tracy Wanjiku, Des Moines High School, WA
 College applications and financial aid

Membership and Service

Professional Membership

2019 (current) Society for Integrative and Comparative Biology
2019 (current) American Association of Immunologists
2010 (current) Society for Neuroscience, Member
2009-2012 International Neuroethics Society, Member

Professional Service

2021 Reviewer for journal: *Zoology*; *PlosOne*; *Integrative and Comparative Biology*
2020 Reviewer for journal: *Zoology*
2020 External reviewer, NSERC Discovery Grants Program
2018-2019 Reviewer for journals: *Brain, Behavior, and Immunity*; *Neuroendocrinology*
2017 Ad hoc reviewer, NSF CAREER Program
2015-2017 Reviewer for journals: *Developmental Neurobiology*; *Evolutionary Ecology Research*; *Molecular Ecology*; *eLIFE*

Academic Service

2020 Website Designer, www.boipuva.com, Biology Outreach and Inclusion Program, Department of Biology, UVa
2020 Member, Community Building and Planning Committee, Department of Biology, UVa
2019 Co-designer and organizer, Cell Biology Art Display PLSB3, Department of Biology, UVa
2018 Organizer, Post-doc Mini Symposium, Department of Biology, UVa
2015 Co-organizer, Human Biology Retreat, Fred Hutchinson Cancer Research Center
2013-2014 Representative, Graduate Student Body Coordinating Committee, elected position, Department of Biology, UW
2012-2013 Graduate Student Representative, Faculty Appointments Committee, Department of Biology, UW
2012-2013 Organizer, Cell and Molecular Biology Training Grant Monthly Meeting, UW
2011-2014 Founder and organizer, Department of Biology Monthly Social, UW
2011-2012 Representative, Graduate Student Body Coordinating Committee, elected position, Department of Biology, UW
2009-2011 Graduate Student Representative, Graduate Program Committee, Department of Biology, UW
2009 Co-organizer, Graduate Student Symposium, Department of Biology, UW
2008-2009 Graduate Student Representative, Undergraduate Curriculum Committee, Department of Biology, UW

Community Service and Outreach

2020 Organizer and host, STEM middle school visit (>25 volunteers, >140 visitors, feedback evaluation, >40 hrs)
2018 Lab host, STEM middle school visit (8 hrs)
2016 Co-organizer, Biotechnology Summer Camp for high school students, in partnership with Shoreline Community College (>20 hrs)
2011, 2013, 2014, 2016 Brain Awareness exhibitor, Brain Awareness Week, Seattle, WA (>20 hrs)
2008-2011 High school student mentor, Making Connections Program, Women's Center, UW (>100 hrs)
2005-2007 Wildlife Care Aid, Progressive Animal Welfare Society, Lynnwood, WA (>500 hrs)