

CV: NIVRETTA THATRA

M.SC. BIOINFORMATICS | NIVRETTA@GMAIL.COM | THATNIV.COM

EDUCATION

- University of British Columbia, Philosophy courses 2022 – 2024
Eight 3-credit courses (A- to A+ in seven for credit courses, one audit)
- University of British Columbia, **Master of Science in Bioinformatics** 2016 – 2019
Thesis: Comparative genome analysis in rodent models of Parkinson's disease and spinocerebellar ataxia type 3
with Dr. Joerg Gsponer² and Dr. Paul Pavlidis³
- University of Washington, **Bachelor of Science in Neurobiology** 2010 – 2014
Minors: Quantitative sciences (statistics in biology), and Global Health
Thesis: Turnover of adult born neurons in the avian song control system during breeding and nonbreeding conditions

WORK EXPERIENCE

- UBC Institute for Resources, Environment and Sustainability¹** August 2020 – present
Communications Manager:
Managing all external communication of IRES research from 15 core faculty and 100+ students, postdocs and RAs
Op-ed drafting and placement in media, for example:
[The UN just recognized access to a healthy environment is a universal human right. It's time for Canada to take action](#), 2022, *The Globe and Mail*
[New stormwater infrastructure is needed for Canadian cities to handle increased urban flooding](#), 2024, *The Conversation CA*
Visuals for departmental events, infographics based on academic papers, and logos
[Click 'visuals' on my website](#) to see my digital portfolio
Daily posting on social media
Overseeing one work learn student: newsletter, website updates, internal seminars
Faculty retreat facilitator and discussion leader
External review: writing, image creation, alumni interviews, and data collection
Workshops for grad students on how to write a lay abstract
- UBC Clean Energy Research Center** Sept 2020 – Jan 2021
Interviews with eight faculty on their research focusing on decarbonization
600-800 word write ups on featured projects
- Freelance Science Communication** 2019 – 2020
MintCopy: Digital content creation for a range of websites (IT Security, COVID19 posts)
Sankofa Consulting: Copy-editing grants on agriculture, livelihoods, and conservation
UHUBOR: Curriculum generation and online tutoring for grade 10 science
- UBC Bioinformatics Graduate Program^{2,3}**
Graduate RA: Comparative analysis in transgenic models of PD and SCA3 2016 – April 2019
Differential expression analysis of RNAseq data
Implemented shell scripts of bioinformatics pipeline in R
Functional, cell types, and overlaps analyses of differentially expressed genes
- The Ubyesey⁴**
Editor & writer: Science section editor for university student newspaper 2016 – 2018

Edited and/or wrote at least three articles per week covering UBC research
Pitched and wrote *On the Origins of Scientists* bi-weekly column

Allen Institute for Brain Science⁵

Research Associate: In vitro single cell characterization; 2015 – 2016
Digital reconstruction of 70+ mouse V1 neurons
Collaborative work with UW's Mozak team for citizen science
Quality control of ISH images for IVY glioblastoma project
Contrast-to-noise image analysis for IVSCC project
Annotation of injection sites for connectivity studies

Co-op Intern: Annotation of EM dataset to reconstruct <1mm³ of visual cortex 2014
Ultra-microtome sectioning for pilot EM datasets

The University of Washington⁶

Undergraduate RA: Computational modeling of adult avian neural birth and apoptosis 2009 – 2014
Breeding conditions' effect on neuronal replacement in songbirds

LITERARY PUBLICATIONS

Fiction: [The Guillotine](#), *Savante-Garde Magazine* March 2020
[The Perfect Interview](#), *Shrapnel Magazine* Nov 2019
Poems in: [The Ekphrastic Review](#), *Cypress Press*, [CATCH](#) audio poetry series, 2020 – 2022
[DREGINALD](#), *Massy Arts Society*

SCIENTIFIC PUBLICATIONS

Gouwens, N. W., et al. Classification of morphological and electrophysiological types in mouse visual cortex. *Nature Neuroscience* 22, pages 1182–1195 (2019)

Larson, T.A., **Thatra, N.M.**, Hou, D., Hu, R. A. & Brenowitz, E. A. Seasonal changes in neuronal turnover in forebrain nucleus in adult songbirds. *Journal of Comparative Neurology* 527, 767-779 (2019)

Miller, J. et al. Neuropathological and transcriptomic characteristics of the aged brain. *eLife*, 6. (9 Nov 2017)

Larson TA, Lent KL, Bammler TK, MacDonald JW, Wood WE, Caras ML, **Thatra NM**, Budzillo A, Perkel DJ, Brenowitz EA. Network analysis of microRNA and mRNA seasonal dynamics in a highly plastic sensorimotor neural circuit. *BMC Genomics* (6 November 2015)

Larson TA, **Thatra NM**, Lee B, Brenowitz EA. Reactive neurogenesis in response to naturally occurring apoptosis in an adult brain. *The Journal of Neuroscience*. 34(39): 13066–13076 (24 September 2014)

Larson TA, Wang TW, Gale SD, Miller KE, **Thatra NM**, Caras ML, Perkel DJ, Brenowitz EA. Postsynaptic neural activity regulates neuronal addition in the adult avian song control system. *Proceedings of the National Academy of Sciences*. USA. 110(41) (8 October 2013)

RELEVANT SKILLS

Technology

WordPress, HTML, Adobe Illustrator, Canva Pro, Hootsuite & Pallyy, MailChimp, R, Unix shell scripting, ImageJ, CATMAID (electron microscopy imaging), Vaa3d (reconstruction of neurons using brightfield images of biocytin labeled z-stack)

Communication

Story writing starting from pitching, to conducting interviews, to writing, to creating related infographics, to post-hoc dissemination; Coordinating a team of faculty writers, editing articles;

Teaching comms workshops for grad students; Facilitating faculty meetings; Society for neuroscience poster presentations in 2017 and 2013

Wet lab

Behavioral analysis (birdsong spectral properties), sacrificing and fresh-freezing avian brains, *in vivo* electrophysiological recordings in non-mammalian species, cryo-, microtome, & ultra-microtome sectioning, immunohistochemistry (single to triple labeling and cell death assays, immunofluorescence imaging, DAB imaging, nuclei volume measurements, cell counts, ELISAs)

Symposia Presentations

Society for Neuroscience	Poster Presentation	11/2017
"Expression analysis in mouse models of neurodegenerative diseases"		
Allen Institute for Brain Science Showcase Symposium	Poster Presentation	09/2015
"3D Reconstruction of Neurons in Vaa3D for the Mouse in vitro Single Cell Characterization Project"		
Allen Institute for Brain Science Showcase Symposium	Poster Presentation	09/2014
"Resconstructing neurons in serially sectioned electron microscopy images"		
UW Undergraduate Research Symposium	Oral Presentation	05/2014
"Turnover of Adult Born Neurons"		
Society for Neuroscience	Poster Presentation	11/2013
"Turnover of adult born neurons in the avian song control system"		
Computational Neuroscience Connection	Oral Presentation	09/2013
"Quantitative modeling of neural addition and apoptosis in an avian species"		
UW Undergraduate Research Symposium	Oral Presentation	05/2013
"Seasonally induced neuronal death, reactive neurogenesis, and the effects on behavior"		
UW Undergraduate Research Symposium	Poster Presentation	05/2012
"Seasonal Plasticity in an Avian Song Control System: An Examination of Neuronal Recruitment and Apoptosis During Transition from Breeding to Nonbreeding Seasons"		
Howard Hughes Medical Institution Undergrad. Symposium	Poster Presentation	10/2011
"Efferent Neural Activity Regulates Adult Neuronal Recruitment in the Avian Song Control System"		

FUNDING totaling \$50,500

UBC Affiliated Fellowship: Cordula and Gunter Paetzold	2017 – 2018
NSERC – CREATE	2016 – 2017
Mary Gates Research Scholarship	2014
UW Dept. of Biology Sargent Award	11/2013
Computational Neuroscience Travel Scholarship	09/2013
Computational Neuroscience Training Program ⁶	2013 – 2014
Mary Gates Research Scholarship	2012

REFERENCES & association to applicant

1. Gillian Harris, Administrative Manager	604-822-7725	gharris@ires.ubc.ca
2. Dr. Joerg Gsponer, Co-Master's thesis supervisor	604 827 4731	gsponer@mssl.ubc.ca
3. Dr. Paul Pavlidis, Co-Master's thesis supervisor	604 827 4157	paul@mssl.ubc.ca
4. Jack Hauen, Coordinating editor	647 216 6071	jackhauen@gmail.com
5. Dr. Staci Sorensen, Senior manager	206 548 7096	stacis@alleninstitute.org
6. Dr. Tracy Larson, Bachelor's thesis supervisor	206 437 0740	tal8d@virginia.edu