

# CV: NIVRETTA THATRA

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

## EDUCATION

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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 Gsponer** and Dr. **Paul Pavlidis**

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

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**UBC Institute for Resources, Environment and Sustainability**<sup>1</sup> August 2020 – present

Communications Manager:

Managing external communication of IRES research

Daily posting and online promotion via social media

Op-ed drafting and placement, drafting press releases for UBC Media Relations

Oversight of one work learn student for internal communication

**UBC Clean Energy Research Center** Sept 2020 – Jan 2021

Interviews with faculty on their research focusing on decarbonization

600-800 word write ups on featured projects

**Freelance Science Communication** 2019 – present

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**<sup>2,3</sup>

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 DE genes

**The Ubyyssey**<sup>4</sup>

Editor & writer: Science section editor for official university 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 Science**<sup>5</sup>

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 <1mm<sup>3</sup> of visual cortex 2014

Ultra-microtome sectioning for pilot EM datasets

**The University of Washington**<sup>6</sup>

Undergraduate RA: Computational modeling of adult avian neural birth and apoptosis 2009 – 2014

Breeding conditions' effect on neuronal replacement in songbirds

## SCIENTIFIC PUBLICATIONS

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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

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### Technology

R, Unix shell scripting, Adobe Illustrator (newspaper layouts), Hootsuite & associated social media (Facebook, Twitter, Instagram), MailChimp, ImageJ, CATMAID (electron microscopy imaging), Vaa3d (reconstruction of neurons using brightfield images of biocytin labeled z-stack)

### Communication

Journalistic story pitching, writing, and management; cold-calling interview subjects, conducting interviews, transcribing, coordinating a team of volunteer writers, editing volunteer-written articles; 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 <i>in vitro</i> Single Cell Characterization Project"		
Allen Institute for Brain Science Showcase Symposium	Poster Presentation	09/2014
"Reconstructing 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

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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 <sup>6</sup>	2013 – 2014
Mary Gates Research Scholarship	2012

## REFERENCES & association to applicant

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|---|--------------|--|
| 1. Gillian Harris, Administrative Manager           | 604-822-7725 | <a href="mailto:gharris@ires.ubc.ca">gharris@ires.ubc.ca</a> |
| 2. Dr. Joerg Gsponer, Co-Master's thesis supervisor | 604 827 4731 | gsponer@msl.ubc.ca   |
| 3. Dr. Paul Pavlidis, Co-Master's thesis supervisor | 604 827 4157 | paul@msl.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   |