

# Himal Shrestha

PHD STUDENT

La Trobe University

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*I am a PhD student in Bioinformatics at La Trobe University studying the transmission of a parasitic disease called River Blindness. I utilize different computational and mathematical approaches to integrate genomic, environmental and epidemiological data to predict, prevent and eliminate infectious and non-infectious diseases.*

## Education

### PhD in Bioinformatics

LA TROBE UNIVERSITY

Melbourne, Australia

2019-2022(expected)

### Master of Biotechnology and Bioinformatics

LA TROBE UNIVERSITY

Melbourne, Australia

2017-2019

### Bachelor of Science in Human Biology

KATHMANDU UNIVERSITY

Dhulikhel, Nepal

2012-2016

## Skills

### COMPUTATIONAL SKILLS

- Programming languages: R, Python, MATLAB, Bash, Julia, javascript and C
- GIS softwares: Earth Engine, QGIS
- Markup and version control: LaTeX, Markdown, RMarkdown, CSV, JSON, YAML, Git, VSCode
- Bioinformatics databases: NCBI, UniProt, EMBL-EBI, DDBJ, Wormbase and Vectorbase
- Miscellaneous: High Performance Computing Clusters, SPSS, Origin, Microsoft packages

### WET LAB SKILLS

- Samples: Clinical (blood, sputum, urine), microbiological (bacteria, fungus) and molecular samples (protein, RNA, plasmid and DNA)
- Molecular techniques: DNA and plasmid extraction, Gel Electrophoresis, SDS PAGE, ELISA, Cloning with restriction endonuclease, Primer Design for PCR, Protein separation with IMAC

### ORGANIZATIONAL AND COMMUNICATION SKILLS

- Active committee member: PAM-HDR, COMBINE-AU, COMBINE annual symposium-2021
- Initiated undergraduate student club, One Class One Community (OCOC) with approximately 200 members
- Verbal communication: presentations in seminar, conferences, teaching and co-host of a podcast, Science ka Kura
- Written communication: journal articles, thesis, newsletters at PAM-HDR and report writing

## Employment

### Casual academic

LA TROBE UNIVERSITY

Melbourne, Australia

Feb, 2020-Ongoing

- BIO5INF (Bioinformatics), BIO1MGC (Molecules, Genes and Cells), BIO1EEB (Ecology, Evolution and Biodiversity)

### La Trobe Outreach Demonstrator

LA TROBE UNIVERSITY

Melbourne, Australia

Jan, 2020

- Bytesize Bioinformatics

### Research assistant

LA TROBE UNIVERSITY

Melbourne, Australia

Jul-Aug, 2019

- Performed analysis of embryogram and skin snip data of female *Onchocerca volvulus* parasite

# Publications

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## JOURNAL PUBLICATIONS (PEER REVIEWED)

- R Shrestha, DP Subedi, S Adhikari, A Maharjan, **H Shrestha**, GR Pandey (2017). Experimental Study of Atmospheric Pressure Argon Plasma Jet-Induced Strand Breakage in Large DNA Molecules, *Plasma Medicine*, vol. 7, no. 1. doi:10.1615/PlasmaMed.2017019986
- J Shrestha Manandhar, R Shrestha, N Basnet, P Silwal, **H Shrestha**, A Risal, D Kunwar (2017). Study of Adherence Pattern of Antidepressants in Patients with Depression, *Kathmandu University Medical Journal (KUMJ)*, vol. 15, no. 57, pp: 3-9. PMID: 29446354
- JTM Shrestha, **H Shrestha**, M Prajapati, A Karkee, A Maharjan (2017). Adverse Effects of Oral Hypoglycemic Agents and Adherence to them among Patients with Type 2 Diabetes Mellitus in Nepal, *Journal of Lumbini Medical College*, vol. 5, no. 1, pp. 34-40. doi:10.22502/jlmc.v5i1.126

## CONFERENCE ABSTRACTS

- **H Shrestha**, K McCulloch, SM Hedtke, SM Feleke, WN Grant (2021). Geospatial analysis of pre-intervention prevalence of onchocerciasis in Ethiopia. Australian Society of Parasitology Online Conference (Virtual). Jun 23-25, 2021.
- **H Shrestha**, K McCulloch, SM Hedtke, WN Grant (2021). Geospatial mapping of onchocerciasis prevalence in Ethiopia. Spatial and Temporal Statistics Symposium (STSS), University of Wollongong (Virtual), February 17-19, 2021.
- **H Shrestha**, SM Hedtke, K McCulloch, WN Grant (2020). Identifying spatial patterns of onchocerciasis transmission using landscape analysis. Science bite talk at PAM Research Symposium 2020 held online on December 10 and 11, 2020.
- WN Grant, SM Hedtke, K McCulloch, S Wanji, **H Shrestha** (2020). Elucidating ivermectin's action on reproduction of adult female *Onchocerca volvulus* from embryogram data: the basis for the embryostatic phenotype and sub-optimal response. Anthelmintics: Discovery to Resistance IV, Los Angeles, California, February 3-7, 2020
- **H Shrestha** (2019). Elucidating ivermectin's action on reproduction of adult female *Onchocerca volvulus* from embryogram data: the basis for the embryostatic phenotype. PRISM2 Annual Conference, Woodward Conference Centre, Carlton, Victoria, November 12-13, 2019.
- W Grant, S Hedtke, S Wanji, **H Shrestha** (2019). Ivermectin and fertility in nematodes. The second Australian *C. elegans* Symposium (ACES, 2019), Queensland Brain Institute, The University of Queensland, Brisbane, Queensland, October 23-25, 2019.
- **H Shrestha**, SM Hedtke, K McCulloch, S Wanji, WN Grant (2019). Effect of ivermectin treatment on adult female *Onchocerca volvulus* from embryogram data: evidence for periodicity of reproduction and the basis for the embryostatic phenotype. Oral presentation (15 mins) at annual meeting of Australian Society for Parasitology, Adelaide Convention Centre, South Australia, July 8-11, 2019.
- S Gautam, P Gyawali, J Singh, **H Shrestha** (2016). Assessment of C-Reactive Protein/Albumin Ratio in Critically Ill Patients with Various Underlying Diseases. Poster presentation at Second Annual Scientific Meeting (NACC-CON 2016) at Dhulikhel Hospital Kathmandu University Hospital, Nepal, August 20-21, 2016.
- A Maharjan, **H Shrestha**, S Shrestha (2016). Prevalence of Rheumatic Symptoms in Urban Population of Kathmandu Valley. Poster presentation at 7th National Conference on Science and Technology, Kathmandu, Nepal, March 29-31, 2016.
- **H Shrestha**, A Maharjan, S Shrestha (2016). Attitudes Towards Menstruation of Pre-menstruating Adolescent School Girls. Poster presentation at 7th National Conference on Science and Technology, Kathmandu, Nepal, March 29-31, 2016.

# Trainings and workshops attended

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## PROGRAMMING AND MODELLING WORKSHOPS

- Jun 28, Jul 09, 2021: Data-Driven Modelling in Mathematical Biology (Virtual), MATRIX and AMSI
- Jun 28 - Jul 02, 2021: Helminth Bioinformatics - Asia (Virtual), Wellcome Connecting Science
- Nov 02-06, 2020: Hierarchical Modelling of Species Communities with the R-package Hmsc (virtual), University of Helsinki, Finland
- Sep 16, 2019: COMBINE R package development workshop, COMBINE-AU, Walter and Eliza Hall Institute, Melbourne, Australia
- Aug 08 - Sep 12, 2019: 6-Week Technical Deep Learning Workshop, Braneshop, Bluerock, Melbourne, Australia
- Feb 04-08, 2019: Mplus course on Structural Equation Modelling (SEM) and Multilevel Modelling (MLM), University of Melbourne, Melbourne, Australia
- Dec 14, 2018: G\*Power Workshop, La Trobe University, Melbourne, Australia

# Awards

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## LTU Postgraduate Research Scholarship (LTUPRS)

LA TROBE UNIVERSITY

Melbourne, Australia

2019-Ongoing

## Australian Society of Parasitologists (ASP) student travel grant

AUSTRALIAN SOCIETY OF PARASITOLOGY

Adelaide, Australia

2019

## Pro Vice Chancellor's Commendation 2018

LA TROBE UNIVERSITY

Melbourne, Australia

2019-Ongoing

## Diversity Scholarship: Technical Deep Learning Workshop

BRANESHOP

Melbourne, Australia

2019

## Research Poster Excellence Award

MASTER'S POSTER SESSION (LA TROBE UNIVERSITY)

Melbourne, Australia

2019