

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

Research grants

Co-investigator/Sub-awardee

UNICEF/UNDP/WORLD BANK/WHO SPECIAL PROGRAMME FOR RESEARCH AND TRAINING IN TROPICAL DISEASES (TDR/WHO)

(US\$108,000)

2021-2022

- Population genetic tools for onchocerciasis control programmes to determine transmission zones.

Publications

JOURNAL PUBLICATIONS (PEER REVIEWED)

- **Shrestha H**, McCulloch K, Hedtke SM, Grant WN. Geospatial modeling of pre-intervention nodule prevalence of *Onchocerca volvulus* in Ethiopia as an aid to onchocerciasis elimination. Cotton J, editor. PLoS Negl Trop Dis. 2022 Jul 18;16(7):e0010620.
- Gyawali P, Tamrakar D, Shrestha A, **Shrestha H**, Karmacharya S, Bhattarai S, et al. Consumer acceptance and preference for brown rice – A mixed method qualitative study from Nepal. Food Sci Nutr. 2022 Mar 4;fsn3.2803.
- Gyawali P, **Shrestha H**, Pant V, Risal P, Gautam S. C-reactive Protein to Albumin Ratio among Patients Admitted to Intensive Care Unit of a Tertiary Care Hospital: A Descriptive Crosssectional Study. J Nepal Med Assoc. 2021 Dec 11;59(244):1247-51.
- 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**, SM Hedtke, K McCulloch, WN Grant (2021). Landscape genetics to determine factors for ongoing transmission of onchocerciasis in the transition region of Ghana. Oral presentation (15 mins) at COMBINE Student Symposium (Virtual), Nov 22, 2021.
- **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.

Trainings and workshops attended

Awards

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