

# Swapnil Tichkule

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## CONTACT

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Unites States

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## CURRENT POSITION

### Postdoctoral Fellow – Neurogenomics

Icahn School of Medicine at Mount Sinai  
New York, United States

**Nov 2023 – Present**

## EDUCATION

### Postdoctoral Researcher – Computational biology

Walter Eliza Hall Institute of Medical Research  
Melbourne, Australia

**Jun 2022 – Oct 2023**

### PhD – Bioinformatics – Medical biology

Walter Eliza Hall Institute of Medical Research  
The University of Melbourne, Australia  
Population genetics & evolutionary genomics in infectious diseases

**Feb 2018 – Jun 2022**

### M. Tech – Information Technology

Indian Institute of Information Technology Allahabad (IIIT-A), India  
Specialization in Bioinformatics (CGPA – 9.0)

**Aug 2013 – Jul 2015**

### B. Tech – Biotechnology

The ICFAI University, Dehradun, India (CGPA – 6.5)

**Jul 2008 – Jul 2012**

## SCHOLARSHIPS & AWARDS

- Australian Society of Parasitology - **Network Researcher Exchange, Training and Travel Award** (2023 & 2021)
- WEHI PDA Professional Development Award (2022)
- Nominated for the prestigious Schmidt Science Fellowship by The University of Melbourne (2022)
- **2<sup>nd</sup> prize** in the ePoster competition at the AMSI BioInfoSummer hybrid conference (2021)
- Australian Society of Parasitology - **JD Smyth Postgraduate Travel Award** (2021)
- Australian Society of Parasitology - **Network Researcher Exchange, Training and Travel Award** (2021)
- **3<sup>rd</sup> place – “Finalist award”** for oral presentation in Infection, at Medicine Dentistry & Health Sciences (MDHS) graduate research conference, Melbourne, Australia (2020)
- **Best Young Research Presentation** at 7<sup>th</sup> International Giardia and Cryptosporidium Conference (IGCC), Rouen, Normandy, France (2019)
- Australian Society of Parasitology Student Travel Award (2023 & 2019)

- Melbourne Research Scholarship (2018 – 2022)
- GATE Scholarship, India (2013 – 2015)

## PUBLICATIONS

### Publications during Postdoc

- Miceli, Rebecca, et al. "Extracellular Vesicles RNA Sequencing and Bioinformatic Analyses: Current Challenges, Possible Solutions, and Recommendations." *Journal of Extracellular Vesicles* (under revision) (2024)
- Woodhouse, JN, et al. "Long-term stability of the genome structure of the cyanobacterium, Dolichospermum in a deep German lake." *Harmful Algae* (2024)

### Publications during PhD

- Corsi, Giulia I\*, **Tichkule, Swapnil\***, et al. "Recent genetic exchanges and admixture shape the genome and population structure of the zoonotic pathogen *Cryptosporidium parvum*." *Molecular Ecology* (2023).
- **Tichkule, Swapnil**, et al. "Global population genomics of two subspecies of *Cryptosporidium hominis* during 500 years of evolution." *Molecular Biology and Evolution* (2022).
- **Tichkule, Swapnil**, et al. "VIVID: a web application for variant interpretation and visualisation in multidimensional analyses." *Molecular Biology and Evolution* (2022).
- **Tichkule, Swapnil**, et al. "Comparative genomics revealed adaptive admixture in *Cryptosporidium hominis* in Africa." *Microbial genomics* (2021).

### Additional publications during PhD

- Su, Qiao, et al. "Transcriptomic analysis of albendazole resistance in human diarrheal parasite *Giardia duodenalis*." *International Journal for Parasitology: Drugs and Drug Resistance* (2023)
- John, Alan, et al. "Conservation, abundance, glycosylation profile, and localization of the TSP protein family in *Cryptosporidium parvum*." *Journal of Biological Chemistry* (2023)
- Emery-Corbin, Samantha, et al. "In vitro selection of *Giardia duodenalis* for Albendazole resistance identifies a  $\beta$ -tubulin mutation at amino acid E198K." *International Journal for Parasitology: Drugs and Drug Resistance* (2021)
- Balan, Balu, et al. "Multimodal regulation of encystation in *Giardia duodenalis* revealed by deep proteomics." *International journal for Parasitology* (2021)
- Emery-Corbin, Samantha, et al. "Eukaryote-conserved methylarginine is absent in diplomonads and functionally compensated in *Giardia*." *Molecular Biology and Evolution* (2020).

### Publications before PhD

- Kundu, Nidhi, et al. "Disulphide bond restrains the C-terminal region of thermostable direct hemolysin during folding to promote oligomerization." *Biochemical Journal* (2017).

- Choudhary, Preeti, et al. "CSmetaPred: a consensus method for prediction of catalytic residues." *BMC bioinformatics* (2017).
- Kumar, Himansu, et al. "Effect of STAT3 inhibitor in chronic myeloid leukemia associated signalling pathway: a mathematical modelling, simulation and systems biology study." *3 Biotech* (2016).
- Rai, Sneha, et al. "Recent trends in in-silico drug discovery." *International Journal for Computational Biology* (2016).
- Kumar, Himansu, et al. "Parameters Involved in Autophosphorylation in Chronic Myeloid Leukemia: a Systems Biology Approach." *Asian Pac J Cancer Prev* (2015).

## EXTRACURRICULAR ACTIVITIES

- Review Editor for the *Frontiers in Microbiology* (2023 - Present)
- Student representative of Entrepreneurship Steering Committee at WEHI, Melbourne (2019-2021)
- Invited guest lecture at Istituto Superiore di Sanità (ISS), Rome, Italy (2019)

## INTERNSHIPS & EMPLOYMENT

<b>Organization</b>	Indian Institute of Science Education & Research-Mohali (IISER-M), India
<b>Position</b>	Junior Research Fellow (December 2015 – July 2017)
<b>Project</b>	Structural and functional characterization of <i>Vibrio parahaemolyticus</i> Thermostable direct hemolysin (TDH) by Protein engineering & design and Molecular Dynamics Simulation study.
<b>Organization</b>	Centre for Cellular and Molecular Biology (CCMB), India
<b>Position</b>	Research Intern (May 2014 – July 2014)
<b>Project</b>	Developed a tool to predict protein coding regions by the 3-base periodicity based on Discrete Fourier Transformation algorithm for DNA sequences.

## CONFERENCE ABSTRACTS & ORAL PRESENTATIONS

- Oral Presentation: 15th International Congress of Parasitology (ICOPA-Denmark), 21/08/2022 – 26/08/2022
- Oral Presentation & Poster Presentation: AMSI BioinfoSummer Hybrid Conference, Australia, 29/11/2021 – 02/12/2021
- Oral Presentation: Phylomania virtual conference, 25/11/2021
- Oral Presentation: ABACBS virtual conference, 23/11/2021 – 24/11/2021
- Oral Presentation: COMBINE student symposium, Australia, 22/11/2021
- Oral Presentation: 15th GeneMappers Conference, Australia, 23/06/2021 – 25/06/2021
- Oral Presentation: Parasitavaganza online ASP conference, 23/06/2021 – 25/06/2021
- Oral Presentation: The University of Melbourne MDHS GR Conference, Australia, 08/12/2020
- Oral Presentation: AMSI BioinfoSummer virtual conference, 30/11/2020 – 03/12/2020
- Oral Presentation: ABACBS Virtual Conference, 23/11/2020 – 27/11/2020

- Poster Presentation: Parasitavaganza online ASP conference, 30/07/2020 – 31/07/2020
- Poster Presentation: 41st Lorne Genome Conference, Lorne, Australia 16/02/2020 – 18/02/2020
- Oral Presentation: Australian Society of Parasitology (ASP), Adelaide, Australia 08/07/2019 – 11/07/2019
- Oral Presentation: 7th International Giardia and Cryptosporidium Conference (IGCC), Rouen, Normandy, France 23/06/2019 – 26/06/2019.
- Poster Presentation: 40th Lorne Genome Conference, Lorne, Australia 17/02/2019 – 19/02/2019

## **TECHNICAL SKILLS**

- Programming -R, Python and Shell scripting
- Data analysis -DNAseq, RNAseq, ATACseq, single cell
- Structural biology -Molecular docking & Molecular dynamics simulation
- Genomics & Genetics -Microbiome & Metagenome analyses, Phylogenomics, Comparative Genomics, Population genetics, Evolutionary genomics