

Veani Roshale Fernando

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Education

- Aug 2018 – May 2023 **University of Toledo**
Doctor of Philosophy, Biomedical Science (Cancer Biology)
United States
- Mar 2013 – Feb 2017 **University of Colombo**
Bachelor of Science, Bioinformatics
Colombo, Western, Sri Lanka

Teaching Experience

- Jun 2024 – Apr 2025 **Independent Tutor**
Tutor.com / The Princeton Review, USA
K–12 Level (Primary & Secondary education) Teaching
- Courses tutored
- Statistics
 - Biology
 - Science (Elementary & Mid-Level)
 - Mathematics (Elementary & Mid-Level)
 - English Language Learner (ELL)
- Job Responsibilities
- Conducted reviews and revisions on specific subject related topics.
 - Assisted the students in assignments and exam preparation.
 - Reviewed and provided feedback on writing assignments (For ELL)
- Mar 2022 – Apr 2022 **Peer Tutor**
University of Colombo, Department of Plant Sciences, Colombo, Sri Lanka
Graduate Level Teaching
- Course taught
- Cell Signaling
- Job Responsibilities
- Conducted review sessions for Bioinformatics Masters' degree students.
 - Conducted revisions on lecture material and assisted in exam preparation.
- Apr 2017 – Aug 2017 **Assistant Lecturer**
University of Colombo, Department of Plant Sciences
Colombo, Sri Lanka
Undergraduate Level Teaching
- Courses taught
- Introduction to Bioinformatics
 - Experimental Design and Data Analysis
 - Biostatistics
 - Molecular Biology

Job Responsibilities

- Designed laboratory sessions for courses : Introduction to Bioinformatics & Experimental Design and Data Analysis
- Conducted and evaluated laboratory (practical) sessions
- Assisted in evaluating final examinations

Feb 2017 – Mar 2017

Demonstrator (Teaching Assistant)

University of Colombo, Department of Plant Sciences, Colombo, Sri Lanka
Undergraduate Level Teaching

Courses taught

- Cell Biology & Genetics.
- Microbiology

Job Responsibilities

- Assisted in designing and organizing laboratory (practical) sessions
- Assisted in evaluating laboratory (practical) sessions.

Research Experience

Jul 2023 – Present

Post-Doctoral Fellow

University of Colorado Anschutz Medical Campus, Department of Medicine/Rheumatology

Aurora, Colorado, United States

"TGF- β 1 and IL-6 Trans signaling in the lung in Rheumatoid Arthritis (RA) associated Interstitial Lung Disease (ILD)" – Supervisor: Dr. Kristen Demoruelle

- Developing a new protocol for the isolation and propagation of lung fibroblasts from the sputum of RA patients.
- Studying the interaction between the Neutrophil extracellular traps (NETs) and lung fibroblasts of RA patients via *in vitro* culture systems.
- Optimizing ELISA assays to measure the NET remnant proteins present in clinical samples of RA patients. (Plasma, Sputum & Synovial Fluid).

Aug 2018 – Jun 2023

PhD Student

University of Toledo, Department of Cell & Cancer Biology

Toledo, Ohio, United States

"Normalizing arginine metabolism in tumor-associated macrophages for an immunogenic shift in HER2+ breast tumor microenvironment" – Supervisor: Dr. Saori Furuta

- Developing cell line and primary cell based *in vitro* models for tumor-associated macrophages (TAMs).
- Establishing a comprehensive structural and functional phenotype profile of TAMs.
- Studying TAM-T cell and Cancer cell interactions via *in-vitro* co-culture systems.

Sep 2017 – Jul 2018

Research Assistant

University of Colombo, Department of Plant Sciences

Colombo, Sri Lanka

"Co-inheritance of Alpha Thalassaemia among patients with Beta Thalassaemia" – Supervisor: Prof. Sachith Mettananda.

- Collecting and maintaining blood samples and clinical data of adult and pediatric thalassaemia patients in Sri Lanka.
- Perform DNA extraction and PCR assays using patient blood samples.

Positions and Employment

07/2023 – Present	Post-Doctoral Fellow, University of Colorado Anschutz Medical Campus, CO, USA
08/2018 – 06/2023	Graduate Research Assistant, University of Toledo, OH, USA.
03/2022 – 04/2022	Peer Tutor, University of Toledo, OH, USA.
09/2017 – 07/2018	Research Assistant, University of Kelaniya, Ragama, Sri Lanka.
04/2017 – 08/2017	Assistant Lecturer, University of Colombo, Colombo, Sri Lanka.
02/2017 – 03/2017	Demonstrator, University of Colombo, Colombo, Sri Lanka.
01/2016 – 02/2016	Research Intern, Biotechnology Unit, Industrial Training Institute (ITI), Colombo, Sri Lanka.

Scientific Memberships

2022 – Present	Graduate Student Member, American Society for Cell Biology
2020 – Present	Associate Member, American Association for Cancer Research.
2019 – 2020	Member, American Association for the Advancement of Science.

Awards, Scholarships & Grants

12/2022	Winner, 3 Minute Thesis competition 2022 (3MT®), University of Toledo, USA.
12/2022	Runner Up, Elevator speech contest, Public Information and Public Policy committees, ASCB (Cell Bio 2022)
10/2022	Excellence Award for Outstanding Graduate Student Achievement in Cancer Biology, Department of Cell & Cancer Biology, University of Toledo, USA.
03/2022	First place, Oral presentation, Graduate Research Forum 2022, University of Toledo, USA.
03/2020	Third Place, Oral presentation, Graduate Research Forum 2021, University of Toledo, USA.
09/2018	Scholarship: British Council IELTS scholarship award 2017/2018
08/2015	Most Outstanding Secretary of the year, The best annual report – Gold award, Spirit of Service award: Rotaract International District 3220

Skills

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| <ul style="list-style-type: none"> • Immune Cell Culture: Primary cell & Cell Line derived • Immune & Cancer cell co-culture • Multicolor Flow Cytometry • ELISA • Western Blot • Immunocytochemistry | <ul style="list-style-type: none"> • Live cell imaging • Laboratory animal handling • PCR • Bioinformatics Analysis • R programming • Statistical Data Analysis • Scientific Communication |
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Publications & Presentations

Peer Reviewed Journal Articles

1. Sharma V, **Fernando V**, Zheng X, Choi ES, Sweef O, Thomas V, Szpendyk J, Furuta S. *Immunogenic shift of arginine metabolism triggers systemic metabolic and immunological reprogramming to suppress HER2 + breast cancer*. Cancer Metab. 2025;13(1):15. Epub 2025/03/21. doi: 10.1186/s40170-025-00384-4. PubMed PMID: 40114277; PMCID: PMC11927160
2. **Fernando V**, Zheng X, Sharma V, Sweef O, Choi ES, Furuta S. *Reprogramming of breast tumor-associated macrophages with modulation of arginine metabolism*. Life Sci Alliance. 2024;7(11). Epub 2024/08/28. doi: 10.26508/lsa.202302339. PubMed PMID: 39191486; PMCID: PMC11350068.
3. Matson SM, Ngo LT, Sugawara Y, **Fernando V**, Lugo C, Azeem I, Harrison A, Alsup A, Nissen E, Koestler D, Washburn MP, Rekowski MJ, Wolters PJ, Lee JS, Solomon JJ, Demoruelle MK. *Neutrophil extracellular traps linked to idiopathic pulmonary fibrosis severity and survival*. medRxiv. 2024 May 2;. doi: 10.1101/2024.01.24.24301742. PubMed PMID: 38343853; PubMed Central PMCID: PMC10854325.
4. Figy C, Guo A, **Fernando V**, Furuta S, Al-Mulla F, Yeung K. *Changes in Expression of Tumor Suppressor Gene RKIP Impact How Cancers Interact with their Complex Environment*. Cancers (Basel). 2023 Feb 2;15(3):958. doi: 10.3390/cancers15030958. PMID: 36765912; PMCID: PMC9913418.
5. Beamer M, Zamora C, Nestor-Kalinoski A, **Fernando V**, Sharma V, Furuta S. *Novel 3D Flipwell system that models gut mucosal microenvironment for studying interactions between gut microbiota, epithelia and immunity*. Sci Rep 2023; 13(1):870. doi: 10.1038/s41598-023-28233-8.
6. Sharma V, **Fernando V**, Letson J, Walia Y, Zheng X, Fackelman D, Furuta S. *S-Nitrosylation in Tumor Microenvironment*. Int J Mol Sci. 2021 Apr 27; 22(9). doi: 10.3390/ijms22094600. Review. PubMed PMID: 33925645; PubMed Central PMCID: PMC8124305.
7. **Fernando V**, Zheng X, Sharma V, Walia Y, Letson J, Furuta S. *Correction of arginine metabolism with sepiapterin-the precursor of nitric oxide synthase cofactor BH4-induces immunostimulatory-shift of breast cancer*. Biochem Pharmacol. 2020; 176:113887. Epub 2020/03/01. doi: 10.1016/j.bcp.2020.113887. PubMed PMID: 32112882.
8. Mettananda S, Paranamana S, **Fernando R**, Suranjan M, Rodrigo R, Perera L, Vipulaguna T, Fernando P, Fernando M, Dayanath B, Costa Y, Premawardhena A. *Microcytic anemia in children: parallel screening for iron deficiency and thalassemia provides a useful opportunity for thalassemia prevention in low- and middle-income countries*. Pediatr Hematol Oncol. 2020; 37(4):326-36. Epub 2020/02/20. doi: 10.1080/08880018.2020.1725200. PubMed PMID: 32072846.
9. **Fernando V**, Zheng X, Walia Y, Sharma V, Letson J, Furuta S. *S-Nitrosylation: An Emerging Paradigm of Redox Signaling*. Antioxidants (Basel). 2019; 8(9). Epub 2019/09/20. doi: 10.3390/antiox8090404. PubMed PMID: 31533268; PMCID: PMC6769533.
10. Ren G, Sharma V, Letson J, Walia Y, **Fernando V**, Furuta S. *Reconstituting Breast Tissue with Organotypic Three-dimensional Co-culture of Epithelial and Stromal Cells in Discontinuous Extracellular Matrices*. Bio-Protocol. 2019; 9(19). doi: 10.21769/BioProtoc.3392.
11. Mettananda S, Suranjan M, **Fernando R**, Dias T, Mettananda C, Rodrigo R, Perera L, Gibbons R, Premawardhena A, Higgs D. *Anaemia among females in child-bearing age: Relative contributions, effects and interactions of alpha- and beta-thalassaemia*. PLoS One. 2018; 13(11):e0206928. Epub 2018/11/06. doi: 10.1371/journal.pone.0206928. PubMed PMID: 30388173; PMCID: PMC6214573.

Poster Presentations and Abstracts

1. **Veani R. Fernando**, Vandana Sharma, Xunzhen Zheng and Saori Furuta: *Modulating Arginine Metabolism in Breast Tumor Microenvironment via Sepiapterin - A Novel Immunotherapeutic Strategy for Breast Cancer*. Cell Bio 2022, American Society for Cell Biology, USA; 12/06/2022.
2. **Veani R. Fernando**: *UT research explores how to stop good immune cells from turning bad*. Toledo Blade (Newspaper Article); 06/2021 <https://www.toledoblade.com/a-e/living/2021/06/07/ut-researchers-explore-how-to-stop-good-immune-cells-from-turning-bad/stories/20210607001%20>"]
3. **Veani R. Fernando**, Saori Furuta: *Targeting Arginine metabolism for the reprogramming of Tumor-Associated Macrophages in Her2+ breast cancer*. Graduate Research Forum 2020, College of Medicine and Life Sciences, University of Toledo, USA; 03/2020 [Cancelled due to Covid19 Pandemic]

Oral Presentations and Abstracts

1. **Veani R. Fernando**, Vandana Sharma, Xunzhen Zheng and Saori Furuta: *Modulating Arginine Metabolism in Breast Tumor Microenvironment via Sepiapterin - A Novel Immunotherapeutic Strategy for Breast Cancer*. Microsymposium Session, Cell Bio 2022, American Society for Cell Biology, USA; 12/06/2022.
2. **Veani R. Fernando**, Xunzhen Zheng, Vandana Sharma and Saori Furuta: *Reprogramming Tumor-Associated Macrophages with an endogenous metabolite – Sepiapterin, for breast cancer immunotherapy*. Larry Gentry Research Forum 2022, Department of Cell and Cancer Biology, University of Toledo, USA; 10/11/2021
3. **Veani R. Fernando**, Xunzhen Zheng, Vandana Sharma and Saori Furuta: *Reprogramming Tumor-Associated Macrophages with an endogenous metabolite – Sepiapterin, for breast cancer immunotherapy*. Departmental Seminar 2022, Department of Cell and Cancer Biology, University of Toledo, USA (Webinar); 05/06/2022
4. **Veani R. Fernando**, Xunzhen Zheng, Vandana Sharma and Saori Furuta: *Restoring Nitric Oxide production induce immunogenicity in breast cancer via reprogramming of Tumor-Associated Macrophages*. Midwest Graduate Research Symposium 2022, University of Toledo, USA (Webinar); 04/16/2022
5. **Veani R. Fernando**, Xunzhen Zheng, Vandana Sharma and Saori Furuta: *Sepiapterin mediates immunogenic shift in breast cancer via reprogramming of Tumor-Associated Macrophages*. Graduate Research Forum 2022, College of Medicine and Life Sciences, University of Toledo, USA (Webinar); 03/16/2022
6. **Veani R. Fernando**, Xunzhen Zheng, Vandana Sharma and Saori Furuta: *Sepiapterin mediated restoration of nitric oxide production boosts antitumor immunity in breast tumor microenvironment*. Larry Gentry Research Forum 2021, Department of Cell and Cancer Biology, University of Toledo, USA; 10/22/2021
7. **Veani R. Fernando**, Xunzhen Zheng, Vandana Sharma and Saori Furuta: *Arginine metabolism in tumor-associated macrophages: a target to induce immunogenic shift in breast cancer*. Graduate Research Forum 2021, College of Medicine and Life Sciences, University of Toledo, USA (Webinar); 03/25/2021
8. **Veani R. Fernando**, Xunzhen Zheng, Vandana Sharma and Saori Furuta: *Modulating arginine metabolism for an immunogenic reprogramming of tumor-associated macrophages in breast cancer*. Midwest Student Biomedical Research Forum, University of Nebraska Medical Center, USA (Webinar); 02/27/2021
9. **Veani R. Fernando**, Xunzhen Zheng, Vandana Sharma and Saori Furuta: *Normalizing arginine metabolism in tumor associated macrophages: A novel immunotherapeutic strategy for breast cancer*. Nitric Oxide: Physiology, Pharmacology, and Therapeutic Applications Webinar; 11/17/2020
10. **Veani R. Fernando**, Xunzhen Zheng, Vandana Sharma and Saori Furuta: *Normalizing arginine metabolism in tumor associated macrophages: A novel immunotherapeutic strategy for breast*

cancer. Departmental Seminar 2020, Department of Cancer Biology, University of Toledo, USA (Webinar); 05/06/2020

11. **Veani R. Fernando**, Saori Furuta: *Regulating Arginine metabolism for an immunogenic shift in HER2+ breast tumor microenvironment*. Larry Gentry Research Forum 2019, Department of Cancer Biology, University of Toledo, USA; 10/23/2019
12. Sanjaya Paranamana, **Veani Roshale Fernando**, Marius Suranjan, Rexan Rodrigo, Lakshman Perera, A.G.L.N.P. Fernando, A.M. Fernando, Y. Costa, D.K.T.P. Dayanath, Anuja Premawardhena, Sachith Mettananda: *Aetiology of Microcytic Anaemia in Children*. 16th Asia Pacific Congress of Paediatrics 2018, Bali, Indonesia; 08/2018
13. Sachith Mettananda, Marius Suranjan, **Veani Roshale Fernando**, Tiran Dias, Rexan Rodrigo, Lakshman Perera, Chamila Mettananda, Richard Gibbons, Anuja Premawardhena, Douglas Higgs: *Anaemia among women in child-bearing age: Contributions of alpha- and beta-thalassaemia*. 131st Annual Scientific Sessions of the Sri Lanka Medical Association, Colombo, Sri Lanka; 07/2018
14. Sanjaya Paranamana, **Veani Roshale Fernando**, Marius Suranjan, Rexan Rodrigo, Lakshman Perera, U.K.T. Vipulanayake, A.G.L.N.P. Fernando, A.M. Fernando, Y. Costa, D.K.T.P. Dayanath, Anuja Premawardhena, Sachith Mettananda: *Microcytic anaemia in children: Do we really know the cause?*. 131st Annual Scientific Sessions of the Sri Lanka Medical Association 2018, Colombo, Sri Lanka; 07/2018

Reviewer Experience

Journals

2019	Scientific Reports – 1 Manuscript
2020	Scientific Reports – 3 Manuscripts

Abstracts

2022	Judge, ePoster Spring Symposium for Emerging Scientists, Annual Biomedical Research Conference for Minoritized Scientists (ABRCMS)
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Extracurricular Activities & Leadership Experience

2024 – 2025	Student Mentor, Clear Direction Mentoring, CO chapter, USA
2022	Co-chair, Organizing Committee for Larry Gentry Research Forum 2022, Department of Cell and Cancer Biology, University of Toledo, USA.
2021 – 2022	Cancer Biology Track representative, The Council of Biomedical Graduate Students, University of Toledo, USA.
2016 – 2017	Secretary, Botanical Society, University of Colombo, Sri Lanka.
2014 – 2015	Secretary, Rotaract Club of Faculty of Science, University of Colombo, Sri Lanka (RI District 3220).
2014 – 2015	Vice Secretary Catholic Students' Movement, University of Colombo, Sri Lanka.

Referees

Dr. Kristen Demoruelle
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I hereby certify that the above-mentioned information is true and accurate to the best of my knowledge.

8/25/2025.....
Date


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Signature