Madhushan Serasinghe

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EDUCATION

TRIUMF — **Vancouver, CA**

- Postdoctoral Fellow – Radiochemistry — *February 2026 - Present*
- Advisor: Dr. Valery Radchenko, Dr. Qing Miao

University of Missouri — **Columbia, USA**

- Ph.D. in Chemistry — *January 2021 - December 2025*
- Advisor: Prof. Heather Hennkens

Institute of Chemistry Ceylon — **Colombo, LK**

- Graduateship in Chemistry — *January 2015 - February 2019*
- Advisors: Prof. S. P Deraniyagala, Dr. Ranga Jayakody

RESEARCH EXPERIENCE

University of Missouri - Department of Chemistry — **Columbia, USA**

Graduate Research Assistant — *May 2021 – December 2025*

- Development of an electrochemical technique to separate radioactive ^{155}Tb from $^{nat}Eu_2O_3$/$^{153}Eu_2O_3$ and method development for the recovery of the target material.
- Synthesis of basic yttrium carbonate (BYC), develop and optimize BYC-based As debulking method.
- Production and separation of ^{161}Tb formed by irradiating $^{160}Gd_2O_3$ at the University of Missouri, Research Reactor (MURR). (Joint project)
- Production and separation of ^{186}Re formed by irradiating $^{186}WS_2$ at the University of Missouri, Research Reactor (MURR). (Joint project)
- ^{90}Y microparticle production and characterization for ^{90}Y-based brachytherapy approach. (Joint project)

Institute of Chemistry, Ceylon — **Colombo, LK**

Undergraduate Research (In-silico) — *February 2017 – July 2018*

- Design of novel ligands to bind with PTP-1B enzyme which is a causative for Diabetes Mellitus. These ligands could inhibit the activity of the PTP-1B enzyme.
- Studied the binding effects, and stability studies of the designed ligands using Auto Dock, Dock 6, Discovery Studio, GROMACS, and SPARTAN software.

WORKING EXPERIENCE

Morison Pharmaceuticals — **Colombo, LK**

Executive - Quality Assurance — *January 2020 – December 2020*

- Documentation control, maintenance, and storage, pharmaceutical batch reviewing, preparation of standard operating procedures, preparation of IQ and OQ documents for machinery.
- Authorizing documents from quality control, microbiology, and engineering departments, periodic reviewing of documents in those departments, and introducing changes to the system to improve

production.
- Coordinating with foreign clients (e.g.: CIPLA – India) for regulatory purposes.

Institute of Chemistry Ceylon **Colombo, LK**

Graduate Teaching Assistant *June 2019 - December 2019*

- Conducting inorganic, and physical chemistry lab sessions and conducting tutorial classes for undergraduates, preparing pre-lab quizzes, and proctoring examinations.
- Teaching Assistant – In Charge of the General lab sessions conducted for the first-year undergraduates.
- Co-organizer of all Island Australian National Chemistry quiz competitions which is one of the main chemistry competitions in Sri Lanka.

Project Assistant October 2018 – June 2019

- Project development for the removal of Iron and Ilmenite from Black sand. In Sri Lanka, 1.5 tons of black sand is removed as waste in a single day.
- Project development with Waste Management Authority – Sri Lanka to introduce novel micro-organisms that can amplify the decaying and decomposing reactions of the waste material.

SKILLS

- Knowledge in the production and separation of radionuclides such as ^{161}Tb,^{155}Tb, ^{186}Re.
- Knowledge in radiolabeling ^{161}Tb and ^{155}Tb with DOTA and DOTA-TATE chelators and perform radiochemical purity checks with iTLC and radioHPLC.
- Knowledge in calibrating NaI (Tl) well detectors and Liquid Scintillation counter (LSC).
- Knowledge in handling analytical instrumentation such as Inductively Coupled Plasma – Optical Emission Spectroscopy (ICP-OES), HPLC, High Purity Germanium detector (HPGe), Gamma counter, Bioscan, Sodium Iodide detector, Liquid Scintillation Counter (LSC), FTIR, Scanning Electron Microscope, and UV-Vis instruments.
- Knowledge in organic synthesis reactions and purification studies.

PROFESSIONAL SKILLS

Radiation Safety Officer (RSO)

- Responsible for overseeing the Hennkens group radiation laboratories.
- Conduct weekly receipt and swipes of the Mo-99/Tc-99m generator from Mid America Isotopes.
- Conduct weekly shipping and swipes of the Mo-99/Tc-99m generator to Mid America Isotopes.
- Responsible for receiving C-14 samples for swipe testing from Eurofins.
- Responsible for carrying out calibrations of NaI (Tl) well detector, LSC and maintain calibration records.

PROFESSIONAL MEMBERSHIPS

- American Chemical Society (ACS).
- International Society of Radiopharmaceutical Sciences (iSRS).
- Society of Nuclear Medicine & Molecular Imaging (SNMMI).

- SRS-TT (Think Tank) – A platform for early career researchers in the radiopharmaceutical sciences to engage more with experts in the field and promote awareness of opportunities and training programs among student communities.
- ACS [NUCL] Diversity, Equity, Inclusion and Belonging (DEI&B) committee.
- Graduate Professional Council (GPC) – A graduate student leadership organization at the University of Missouri-Columbia.
- Graduate Scholar of Excellence (GSE) – An undergraduate mentoring organization at the University of Missouri-Columbia.
- THRIVE organization – Focuses on creating an inclusive environment for current STEM students at the University of Missouri-Columbia.

HONORS AND AWARDS

- Gamma Alpha Gamma Dissertation Year Fellowship - 2025

  This prestigious award was presented to 4 graduate students (out of 35 final year students) in 2025 for being the outstanding final year graduate students conducting promising dissertation research from various disciplines across campus.

- Inducted for the 2025 class of Mizzou 18 – 2025

  This prestigious annual award is presented to 18 graduate students across the University of Missouri, recognizing their world-class research, collaboration with faculty and staff, and exemplary leadership with undergraduate students and other organizations.

- Donald K. Anderson Research Assistant Award – 2025

  This award was presented to me for being the outstanding research assistant in the MU graduate program for the academic year 2024-25.

- John D. Bies International Travel Scholarship – 2025

  I received this award as travel support from the MU graduate program to fund my visit to Australia for presenting my research at 2025 International Society of Radiopharmaceutical Sciences (iSRS) conference in Gold Coast, Australia.

- Troutner Radiochemistry Travel Award – 2025

  I received this award as travel support from the University of Missouri, Chemistry department to fund my visit to Australia to present my research at iSRS 2025.

- iSRS 2025 Travel Award Recipient – 2025

  I received this award as travel support from the Society of Radiopharmaceutical Sciences to present my research at iSRS 2025.

- Global Tiger Scholarship – 2025

  This award was presented to me by the Alumni Association of University of Missouri – Columbia as educational support to cover financial needs during the dissertation year.

- Graduate Professional Council (GPC) Travel Award Recipient – 2025

  I received this award as travel support from the GPC to fund my visit to Australia to present my research at iSRS 2025.

- David E. Troutner Fellowship in Radiochemistry for 2023-2024

  This award was presented to me for being the outstanding graduate student in radiochemistry in the MU Chemistry Department graduate program for the academic year 2023-24.

- CIBA/YCC Young Scientist Travel Award Recipient – ACS Spring 2024

  This award was received as travel support from the ACS Younger Chemists Committee in recognition of having met the highest standards of excellence in CIBA/YCC.

- iSRS 2023 Travel Award Recipient – 2023

  This award was received as travel support from the Society of Radiopharmaceutical Sciences as I presented my research work at the International Society of Radiopharmaceutical Sciences Conference 2023 held in Honolulu, Hawaii in 2023.

- Southern Regional Education Board (SREB) Doctoral Award Recipient - 2022

  I received this award from the SREB organization which works with states to improve education focusing the minority groups. This is an organization that promotes Inclusion, Diversion, and Equity.

- MU Chemistry Department Graduate Fellowship Recipient – 2021 (Fall)

  I received this award from the Chemistry department of the University of Missouri in the second semester of my first year in graduate school as a scholarship based on my undergraduate skills and performances.

- Ellebracht/Simon Graduate Fellowship Recipient – 2021 (Spring)

  I received this award from the Chemistry department of the University of Missouri in the first semester of my first year in graduate school as a scholarship based on my undergraduate skills and performances.

PUBLICATIONS and ABSTRACTS

- Oral presentation at the International Symposium on Radiopharmaceutical Sciences Conference held in Gold Coast, Australia in May 2025, entitled “Electroamalgamation-and Chromatography-Based Eu/Tb Separation Procedures as a Proof of Concept for Separating ^{155}Tb from Alpha-Irradiated ^{153}Eu” by **Madhushan Serasinghe**, Patrick Bokolo, John D. Lydon, Jim Guthrie, Steven Kelley, D. Scott Wilbur, Yawen Li, Dmitri Medvedev, Cathy S. Cutler, Carolyn J. Anderson, Silvia S. Jurisson, Heather M. Hennkens.

- Poster presentation at the International Symposium on Radiopharmaceutical Sciences Conference held in Gold Coast, Australia in May 2025, entitled “Separation of Bulk Arsenic from ^{72}Se/As Solutions via Adsorption onto Basic Yttrium Carbonate Microparticles to Achieve High Specific Activity ^{72}Se” by **Madhushan Serasinghe,** Jacob DePottey, Emily Omohundro, Anster Charles, David Stalla, D. Scott Wilbur, Yawen Li, Dmitri G. Medvedev, Cathy S. Cutler, Michael Harmata, Heather M. Hennkens.

- Bokolo, Patrick, **Serasinghe, Madhushan**, Kuchuk, Marina, Guthrie, Jim, Embree, Mary, Wilder, Stacy, Medvedev, Dmitri G., Cutler, Cathy S., Wilbur, D. Scott, Li, Yawen, Anderson, Carolyn J., Jurisson, Silvia S. and Hennkens, Heather M. "Production and purification of research scale ^{161}Tb using cation-exchange semi-preparative HPLC for radiopharmaceutical applications" *Radiochimica Acta*, vol. 113, no. 6, 2025, pp. 445-456. https://doi.org/10.1515/ract-2024-0363

- Poster presentation at the Gordon Research Conference and Gordon Research Seminar held in New Hampshire in June 2024, entitled " Development of methods for isolation of radioactive terbium from europium and target material recycling” by **Madhushan Serasinghe**, Patrick Bokolo, Ritin Kamboj,

John D. Lydon, Jim Guthrie, Steven Kelley, D. Scott Wilbur, Yawen Li, Dmitri Medvedev, Cathy S. Cutler, Carolyn J. Anderson, Silvia S. Jurisson, Heather M. Hennkens.

- Oral presentation at the ACS Spring 2024 held in New Orleans, Louisiana in March 2024, entitled "Research scale separation of radioterbium using electro-amalgamation and extraction chromatography methods" by **Madhushan Serasinghe**, Patrick Bokolo, Ritin Kamboj, John D. Lydon, Jim Guthrie, D. Scott Wilbur, Yawen Li, Dmitri Medvedev, Cathy S. Cutler, Carolyn J. Anderson, Silvia S. Jurisson, Heather M. Hennkens

- Oral presentation at the 2023 Midwest and Great Lakes Regional Meeting held in St. Charles Missouri in October 2023, entitled "Lumi804, a chelator for Lu(III), Tb(III), and Zr(IV) theranostic agents for imaging and therapy of cancer" by Ejike Iweha, Khanh-Van Ho, Cyril Fong, Fabio Gallazzi, David Tatum, Patrick Bokolo, **Madhushan Serasinghe**, Heather Hennkens, Darren Magda, Carolyn J. Anderson

- **Serasinghe, M**.; Bokolo, P.; Kamboj, R.; Lydon, J.D.; Guthrie, J.; Wilbur, D. S.; Li, Y.; Medvedev, D. G.; Cutler, C. S.; Anderson, C. J.; Jurisson, S. S.; Hennkens, H. M. Development of an Effective Electro-Amalgamation Technique for Debulking of Eu(III) from Eu(III)/Tb(III) Mixtures: Towards Future Application in the Separation of 155Tb from Alpha-Irradiated 153Eu. Nucl Med Biol 2023, 126-127. https://doi.org/10.1016/j.nucmedbio.2023.108779.

- Bokolo, P.; **Serasinghe, M**.; Manson, L.; Lydon, J.D.; Embree, M. F.; Medvedev, D. G.; Cutler, C. S.; Wilbur, D. S.; Li, Y.; Anderson, C. J.; Jurisson, S. S.; Hennkens, H. M. A Comparison of Cation Exchange and Extraction Resin Column-Based Chromatography Methods for Isolating MURR Produced 161Tb. Nucl Med Biol 2023,126-127. https://doi.org/10.1016/j.nucmedbio.2023.108778.

- Iweha, E.; Bellavia, M.; Bokolo, P.; Key Z.; Pun M.; Van Ho, K.; **Serasinghe, M**.; Gallazzi, F.; Watkinson, L.; Carmack, T.; Tatum, D.; Magda, D.; Hennkens, H.M.; Anderson, C.J. Development of Terbium-161 Based VLA-4 Targeted Theranostics. *Nucl Med Biol* **2023,** 126-127. https://doi.org/10.1016/j.nucmedbio.2023.108470.

- Research article under review for the publication of "[90Y] Yttrium Hydroxycarbonate Microparticles for 90Y-Based Liquid Brachytherapy: Characterization, Radiosynthetic Reformulation, and Preclinical Demonstration of Therapeutic Benefit" by Anster Charles, George Makris, Scot Ellebracht, Patrick Bokolo, **Madhushan Serasinghe**, David Stalla, Mary Embree, Lisa Watkinson, Terry Carmack, Jeff Smith, Carolyn J. Anderson, Jaime Simón, Charles A. Maitz, Heather M. Hennkens.

- Poster presentation at the 49th Annual Meeting of the National Organization for the Professional Advancement of Black Chemists and Chemical Engineers held in Orlando, Florida in September 2022, entitled "Isolation of Research Scale 161Tb for Medical Applications Using Cation-Exchange Semi-Preparative HPLC" by Bokolo, P.; **Serasinghe, M**.; Kuchuk, M.; Guthrie, J.; Embree, M. F.; Medvedev, D. G.; Cutler, C. S.; Wilbur, D. S.; Li, Y.; Anderson, C. J.; Jurisson, S. S.; Hennkens, H. M.

PROFESSIONAL DEVELOPMENT

- Completed a research training as a visiting research scholar at the University of Washington, Seattle medical cyclotron facility in July 2024.

While at the University of Washington, Seattle, I had the opportunity to prepare Eu-153 targets for α – irradiation to produce Tb-155 which has characteristic properties useful in medical imaging. I also got the opportunity to shadow a complete At-211 processing run during my stay in Seattle.

- Completed a Curriculum Practical Training (CPT) opportunity at the medical physics department of the University of Wisconsin School of Medicine and Public Health in December 2023.

  I was appointed as an Honorary Research Associate at the medical physics department of the University of Wisconsin School of Medicine and Public Health where I received hands-on experience in As-71 production and separation methods and hands-on experience in cyclotron-related work.

- Attended the Institute of Teaching and Mentoring conference held at New Orleans, Louisiana in 2024, Tampa, Florida in October 2023 and Atlanta, Georgia in 2022.

  The objective of this conference is to provide scholars from minority groups with the skills necessary to succeed in graduate school and to prepare them for success as faculty members at colleges and universities. The main focuses of this conference are teaching preparation, community insights, and networking.

RESEARCH FUNDING/GRANTS

- United States Department of Energy (DOE) – Office of Science for Isotope R&D production Grant: DE-SC0022235 (PI – Heather Hennkens) Project: Production of high-specific activity Tb-155 and Tb-161. – Co-lead graduate student

- United States Department of Energy (DOE) – Office of Science for Isotope R&D production Grant: DE-FOA-0003063 (PI – Heather Hennkens) Project: Development of High Specific Activity ^{72}Se/^{72}As at a Production Scale for Research and Clinical Applications. – Co-lead graduate student

VOLUNTEER SERVICE

- Reviewer – SREB Doctoral Scholars Program – 2026

  Served as an application reviewer for the Southern Regional Education Board Doctoral Scholars Program, evaluating 9 applications and providing thorough, constructive feedback and scoring to support the selection of qualified candidates.

- Reviewer – TERACHEM – 2026

  Contributed as an abstract reviewer for the TERACHEM 2026 Conference, evaluating 6 submissions and providing constructive feedback and scoring to assist in the selection of presentations.

- Reviewer – SNMMI – 2026

  Served as an abstract reviewer for the Society of Nuclear Medicine and Molecular Imaging (SNMMI) 2026 Conference, evaluating 11 submissions and providing detailed scores and feedback to support the selection of poster and oral presentations.

- Judge – Mizzou 39 – 2025-26

  Mizzou 39 award is presented by the Mizzou Alumni Association to 39 outstanding undergraduates each year. The winners are chosen for their academic achievement, leadership and service to Mizzou and the community. During the 2025–26 academic year, I served as a judge, evaluating candidates based on their academic achievements and service to the university.

- Judge – Show Me Mizzou Research Week – 2025

  Show Me Mizzou Research Week is a celebration of graduate and undergraduate research accomplishments for all community stakeholders to see their investments come to fruition. Here, I served as a judge in the undergraduate category, evaluating participants based on their presentation skills and depth of research, and provided constructive guidance to support their further academic development.

- STEM-CUBS Instructor – 2022-23, 2025

  This is a training camp organized by the Mizzou Inclusion, Diversity, and Equity organization to support people of color and minority backgrounds in the state of Missouri. Here, children of different age groups are categorized based on their age and handed over to a panel of instructors who will guide them through STEM lessons related to their age groups.

- Graduate Ambassador – Graduate Scholar of Excellence – 2022-2025

  Graduate Scholar of Excellence is an organization that consists of graduate students who are being recruited as mentors to guide undergraduate students at the University of Missouri. Here, each graduate student is assigned to an undergraduate student where the task would be to guide the student in their academic path and support them.

  Students mentored:

  1. RaiJah Griffin – Senior (Architectural studies) – 2022-23
  2. Grace Robinson – Senior (Physiology) – 2023-24
  3. Reese Lavers – Senior (Physiology) – 2023-24

  For 2024-25: Mentored a cluster group of 13 students from various majors where I provided them guidance and mentorship to succeed in their respective academic programs.