Dhanushka Weerasekara

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PROFESSIONAL SUMMARY

Bioanalytical chemist with 6+ years of experience in cell culture techniques and separations-based method development with the ability to work independently or as part of a team. Special expertise in the following areas:

- Mammalian cell culture techniques
- Microchip/capillary electrophoresis
- Protein expression and purification (FPLC, ion exchange, SEC)
- Electroanalytical techniques (cyclic voltammetry, amperometry)
- Fluorescence spectroscopy
- SDS-PAGE, gel electrophoresis lab bench procedures
- PCR assays
- UV/VIS

EDUCATION

Ph.D. in Bioanalytical Chemistry (2023), The University of Kansas (Lawrence, KS)
M.Sc. in Molecular Biology and Biochemistry (2013), University of Colombo (Sri Lanka)
B.Sc. in Biological Sciences (2010), University of Kelaniya (Sri Lanka)

Visiting Lecturer in Chemistry **Present**
Department of Chemistry, Trinity College, Hartford, CT

- Teaching Elementary Organic Chemistry II Laboratory.

Visiting Scholar (P.I. Dr. Michelle Kovarik) **Present**
Department of Chemistry, Trinity College, Hartford, CT

- Quantification of Cu and Zn content in *Tetrahymena* cells using inductively coupled plasma mass spectrometry (ICP-MS) to monitor the effect of Cu during oxidative stress conditions.
- Develop a microfluidic system with fluorescence detection for high-throughput single-cell measurements with high temporal resolution cell stimulation.

Graduate Research Assistant (P.I. Dr. Susan Lunte) **2016-2023**
Department of Chemistry, University of Kansas, Lawrence, KS

- Developed microchip capillary electrophoresis-based separation methods to monitor cellular oxidative stress conditions in mammalian (macrophage/microglial) cells using two different detection techniques: electrochemical detection and laser-induced fluorescence.
- Maintained a mammalian cell culture lab for culturing a variety of cells including RAW 264.7, PC-12, SIM A9 and HMC3.
- Collaborated with both international and domestic university research labs on monitoring cellular oxidative stress conditions using microchip capillary electrophoresis methods which resulted in two peer review publications.

- Collaborators: Dr. Giuseppe Caruso, University of Catania, Catania, Italy and Dr. Cory Berkland, Department of Pharmaceutical Chemistry, University of Kansas, KS.
- Provided mentoring and lab training for fellow graduate and undergraduate research students.

Graduate Teaching Assistant **2016-2019**
Department of Chemistry, University of Kansas, Lawrence, KS

- Conducted general chemistry and analytical chemistry laboratory courses and demonstrated the use of instruments such as HPLC-UV and AAS for 30+ undergraduate students.

Volunteer (P.I. Dr. Emily Scott) **2015-2016**
Department of Medicinal Chemistry, University of Kansas, Lawrence, KS

- Optimized the expression and purification methods for a human (membrane) cytochrome P450 enzyme variant to obtain higher protein yields.
  - Experience in *E.coli* expression systems.
  - Protein purification with FPLC including affinity, ion exchange and SEC.

M.Sc student (P.I. Dr. Kithmini Siridewa) **2011-2012**
Faculty of Medicine, University of Colombo, Colombo, Sri Lanka

- Evaluated a polymerase chain reaction assay for the identification of *Bancroftian filariasis* parasite in filariasis patient blood samples from different regions of the country.
  - Experience in molecular biology techniques including PCR, DNA digestion, DNA ligation and gel electrophoresis

PUBLICATIONS

- Privitera, A.; Cardaci, V.; **Weerasekara, D**.; Saab, W. M.; Diolosà, L.; Fidilio, A.; Jolivet, R. B.; Lazzarino, G.; Amorini, A. M.; Camarda, M.; Lunte, M.; Caraci, F.; Caruso, G., Microfluidic/HPLC combination to study carnosine protective activity on challenged human microglia: focus on oxidative stress and energy metabolism. Frontiers in Pharmacology 2023, 14, 1161794.
- **Weerasekara, D. B**.; Lunte, S. M., Separation and Detection of Tyrosine and Phenylalanine-derived Oxidative Stress Biomarkers Using Microchip Electrophoresis with Electrochemical Detection. Electroanalysis 2022, 34 (12), 1913-1927.
- Griffin, J. D.; Christopher, M. A.; Thati, S.; Salash, J. R.; Pressnall, M. M.; **Weerasekara, D. B**.; Lunte, S. M.; Berkland, C. J., Tocopherol Emulsions as Functional Autoantigen Delivery Vehicles Evoke Therapeutic Efficacy in Experimental Autoimmune Encephalomyelitis. Molecular Pharmaceutics 2019, 16 (2), 607-617.

AWARDS

Department of Chemistry, University of Kansas, Lawrence, KS

- Burton & Cheryle MacKenzie Scholarship (awarded to chemistry students based on merit, 2021)
- Cornelius McCollum Research Scholarship (2022)