Lt.Col. (Dr) W.M Manoj Senaka Bandara
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EDUCATIONAL QUALIFICATIONS

PhD: University of Colombo , Sri Lanka (2018)
CTHE: Certificate in Teaching in Higher Education, Staff Development Centre, General Sir John Kotelawela Defence University, Sri Lanka (2013)
MS in Biology : Wayne State University, Detrot MI, USA (2010)
MSc in Biotechnology : University of Peradeniya, Sri Lanka (2005) – GPA 3.82
B.Sc (Hons) : University of Peradeniya, Sri Lanka, (2003) – Second Class Upper Division

RESEARCH EXPERIENCE

1. **Faculty of Medicine, University of Colombo, Sri Lanka - PhD.** (2012-2018)
   Thesis title: Molecular and Cytogenetic Characterization of Haematopoietic Stem Cells of Patients with Myelodysplastic Syndrome in a Sri Lankan Population**..**
2. **Center for Molecular Medicine and Genetics, Wayne State University, USA - Postgraduate Research** (2010 – 2011)
   Research Title: Disease stage and severity in experimental allergic encephalomyelitis modulate expression of gliotrophic and neurotrophic factors
3. **Department of Biological Sciences, Wayne State University, USA – MS** (2007-2010)
   Research title: Identification of Deletion Mutants of Inositol Kinases and Phosphatases Hypersensitive to Valproate**Institute of Fundamental Studies, Sri Lanka** (2005 - 2007)
   Research title: Interactions among endophytic bacteria and fungi: effects and potentials.
4. **Veterinary Research Institute. Sri Lanka- MSc research** (2004 - 2005)
   Research title: Sensitivity of PCR assay techniques for processed meat
5. **Veterinary Research Institute. Sri Lanka- BSc research** (2002)
   Research title: Development of PCR techniques for rapid diagnosis of *Brucella* infections and for their epidemiological investigation.

PROFESSIONAL EXPERIENCE

1. **Senior Lecturer,** Department of Pre-Clinical Sciences , Faculty of Medicine, General Sir John Kotelawela Defence University, Sri Lanka (August 2011- to date)
2. **Head of the Department,** Department of Pre-Clinical Sciences , Faculty of Medicine, General Sir John Kotelawela Defence University, Sri Lanka (June 2020- to date)
3. **Head Biochemistry**, Department of Pre-Clinical Sciences , Faculty of Medicine, General Sir John Kotelawela Defence University, Sri Lanka (July 2015-July 2019)
4. **In-Charge, Biomedical Research Laboratory 1** Faculty of Medicine, General Sir John Kotelawela Defence University, Sri Lanka (January 2019-to date)
5. **Researcher**, Center for Molecular Medicine and Genetics, Detroit , MI USA (May 2010 – Jan 2011)
6. **Graduate Teaching Assistant**, Wayne State University, Detroit , MI USA (September 2007 – May 2009)
7. **Graduate Research Assistant**, Wayne State University, Detroit , MI USA (May 2008 to May 2010)
8. **Research Assistant**, Institute of Fundamental Studies, Sri Lanka (March 2005 - June 2007)
9. **Research Assistant**, Veterinary Research Institute. Sri Lanka (January 2004 - January 2005)
10. **Teaching Assistant,** Department of Molecular Biology and Biotechnology, University of Peradeniya, Sri Lanka (May 2003- December 2003).

SCHOLARSHIPS/GRANTS/AWARDS

- **Best oral presentation**: Annual Scientific Sessions 2017, Sri Lanka College of Hematologists.
- **Research Grant**: National Science Foundation research award (RPHS/2016/C04) for Biomarker Discovery in Haematology – Myelodysplastic Syndromes under Programme on Health Science/expression of interest in 2016.
- **Travelling fellowship** : National Science Foundation, Sri Lanka travelling fellowship OSTP/2012/24
- **Graduate Teaching Assistantship:** Biological Sciences graduate program, Wayne state University, USA 2007.
- **Scholarship** : Masters degree program, ministry of Science and Technology , Sri Lanka and Asian Development Bank, 2004.

PROFESSIONAL INVOLVEMENT AS A RESOURCE PERSON

- **Committee member:** National Stem cell Committee for preparation of guidelines for stem cell work – National Science Foundation, Sri Lanka (2019)
- **Resource person** : "Applications & Hands on Training Workshop on Stem Cells" 2016 at the Human Genetics Unit, Faculty of Medicine, University of Colombo, Sri Lanka.
- **Invited speaker** : SLAAS Biotechnology symposia series 2019,organized by Sri Lanka Association for the Advancement of Science, Colombo, Sri Lanka.
- **Invited speaker** : "Haem-ICon 2019 "The Annual Academic Sessions, Sri Lanka College of Haematologists, Colombo, Sri Lanka.
- **Invited speaker** : SYNERGY'19; panel discussion on 'The Next Frontier of Molecular Diagnostics in Clinical Oncology' on 01st of December, 2019 at SLMA Auditorium, Wijerama Mawatha, Colombo, organized by the Rotaract Club.

MEMBERSHIP/POSITIONS IN ASSOCIATIONS

- Life member, Institute of Biology,Sri Lanka
- Life member, National Science Foundation (NSF), Sri Lanka
- Life member, Sri Lanka Association for the Advancement of Science (SLAAS), Sri Lanka
- President, Sri Lankan Student Association, Wayne State University, USA (May 2008- May 2009)
- Treasurer, Zoologists Association, University of Peradeniya, Sri Lanka (August 2001- August 2002)

TRAINING

- Next Generation Sequencing Technology by Illumina, USA 2015
- Cytogenetics and Fluorescent in situ hybridization conducted by Human Genetics Unit, University of Colombo in Collaboration with Kings College London (2014)
- Short term training programme in "stem cells and regenerative medicine" conducted by Manipal Institute of Regenerative Medicine, Bangalore, India, 15-30 th January 2013
- Course of training for Radiological Health/ radiation Safety, Health Physics Office, Wayne State University, USA (May 2010)
- Training session on "Investigating the Mouse" conducted by the Division of Laboratory Animal Resources and The Institutional Animal Care and Use Committee, Wayne State University, USA (April 2010)
- Workshop on "An Introduction to Quality Assurance in Genetic Diagnostic Laboratories -Molecular Genetics, Cytogenetics, Biochemical Genetics & Newborn screening" Organized by the Human Genetics Unit, Faculty of Medicine, University of Colombo, Sri Lanka in collaboration with the European Molecular Genetics Quality Network (6th and 7th of February 2012)

EXPERIENCE/SKILLS IN LABORATORY TECHNIQUES

- Isolation, cell counting, cryopreservation and culture expansion of stem cells
- Conducting proliferation and differentiation assays of stem cells
- Isolation of DNA, RNA from human tissues and cells
- Quantification of DNA and RNA using fluorometer and bioanalyzer
- Performing PCR and real time PCR
- Molecular cloning : Plasmid preparation, ligation, transformation
- Conducting next generation sequencing
- Data analysis using bioinformatic tools for next generation sequencing
- Karyotyping
- Fluorescent in situ hybridization (FISH)
- Enzyme-linked immunosorbent assay (ELISA)
- Protein purification, SDS-PAGE, Western blot
- Immunohistochemical staining
- Immunofluorescence microscopic analysis

RESEARCH AREAS

Molecular biology, genomic, proteomic and cell biology research involving haematopoietic stem cells, mesenchymal Stem cells and cancer stem cells of stem cell disorders, leukemias and other cancers.

PUBLICATIONS IN PEER REVIEWED JOURNALS

1. A.J. I. S. Rathnayake, **W. M. M. S. Bandara**, N.F. Neththikumara, H. W. W. Goonasekera, and V. H. W. Dissanayake, Novel recurrent mutations in hematopoietic and mesenchymal stem cell compartments in *de novo* Myelodysplastic Syndromes, (2019) *manuscript submitted.*
2. **W. M. M. S. Bandara** and A.J. I. S. Rathnayake (2018). Effect of Long Term Exercises on Cardiometabolic risk factors. Chronicle of Medicine and Surgery. 2 (5) 254 to 262
3. **Manoj S. Bandara**, Hemali W.W. Goonasekera , Vajira H.W. Dissanayake (2016). The utility of haematopoietic stem cell karyotyping in the diagnosis of de novo myelodysplastic syndromes. *Journal of Hematopathology* 9 (3)121–128
4. **Bandara WMMS,** Rathnayake AJIS, Goonasekera HWW and Dissanayake VHW, (2016), Development of Cytogenetic Abnormalities in Myelodysplastic Syndromes**.** *J Mol Genet Med;* 10(2):pp10002171-5.
5. **W M Manoj Senaka Bandara**, A J Iresha Sandeepanie Rathnayake , Korotta Gamage Somasiri (2017) The effect of long term physical exercises on plasma cortisol levels. *International Journal of Medicine*. 5 (2) (2017) 239-242
6. Muthunuwan JT, Ganhewa AGKH, Perera HDSG, Hishaam M, **Bandara WMMS**, HAKM Gunasekera (2017). Preliminary survey on knowledge, attitudes and practices regarding rabies. *Sri Lankan Journal of Infectious Diseases.* 7 (1):38-46
7. **Bandara WMMS**, Rathnayake AJIS, Basnayake BWMTJ, De Silva MKOK, Edirisinghe D, Somasiri KG. (2016).Long term physical exercise improves cardiometabolic risk factors. *Jour of Med Sc & Tech*; 5(1) 34 – 39.
8. Cunqi Ye, **WM M S Bandara**, Miriam L Greenberg (2013) Regulation of inositol metabolism is fine-tuned by inositol pyrophosphates in Saccharomyces cerevisiae. *Journal of Biological Chemistry* 288 (34) 24898-24908
9. Fei Song, **Manoj Bandara**, Harvinder Deol, Jeffrey A Loeb, Joyce Benjamins, Robert P Lisak (2013) Complexity of trophic factor signaling in experimental autoimmune encephalomyelitis: Differential expression of neurotrophic and gliotrophic factors. *Journal of Neuroimmunology*. 262(1-2):11-8
10. **Bandara, W. M. M. S**. Silva, L. P. Rajapaksha, W. R. A. K. J. S. (2007) Sensitivity of PCR assay technique for processed meat. *Indian Vet J* .84 (8) 842-844

11. Gamini Seneviratne, J. S. Zavahir, **W. M. M. S. Bandara** and M. L. M. A. W. Weerasekara (2007) Fungal-bacterial biofilms: their development for novel biotechnological applications. *World J Microbiol Biotechnol.*24 (5) 739-743
12. **Bandara W M M S**, Seneviratne G and Kulasooriya S A (2006) Interactions among endophytic bacteria and fungi: effects and potentials; *J. Biosci.* 31(5) 645–650.

COMMUNICATIONS AT SCIENTIFIC MEETINGS PUBLISHED AS ABSTRACTS

1. WMMS Bandara, AJIS Rathnayake, NF Neththikumara, HWW Goonasekera, VHW Dissanayake. Associations of Genetic Variations in Altered Cellular Pathways in Haematopoietic and Mesenchymal Stem Cell Compartments in Myelodysplastic Syndromes. Colombo Medical Congress February, 2020, p 114
2. **MS Bandara,** I Rathnayake, N Neththikumara, H Goonasekera, V Dissanayake. Genetic Variations in Hematopoietic and Mesenchymal Stem Cells in *de novo* Myelodysplastic Syndromes, **European society for medical oncology**, Asia Congress 2019, Singapore. *Annals of Oncology*, Volume 30, Issue Supplement_9, November 2019.
3. **W.M.M.S. Bandara** , N.F Neththikumara, A.J.I S Rathnayake, H. W. W. Goonasekera. , V. H. W. Dissanayake. Next Generation Sequencing Anaysis of Haematopoietic Stem Cells in a Sri Lankan Cohort of Myelodysplastic Syndromes patients. *Annual Scientific Sessions 2017, Sri Lanka College of Hematologists, pp 22.*
4. **Bandara W.M.M.S**, Neththikumara NF, Goonasekera H. W. W , Dissanayake V. H. W. Investigating the Mutational Status of Haematopoietic Stem Cells in *de novo* Myelodysplastic Syndromes. *Sri Lanka Medical Association, 130th Anniversary International Medical Congress 2017, Ceylon Medical Journal, Volume 62, Supplement 1, July 2017, p 266.*
5. **W.M.M.S. Bandara** , N.F Neththikumara, H. W. W. Goonasekera. , V. H. W. Dissanayake , A next generation sequencing approach to understand the mutational status of haematopoietic stem cells of de novo myelodysplastic syndromes. *Annual research symposium 2017, University of Colombo, p 225.*
6. **Bandara, WMMS,** Rathnayake, AJIS, Neththikumara, NF, Goonasekera, HWW and Dissanayake, VHW Genetic bio-marker discovery in *de novo* Myelodysplastic Syndromes. *National Health Research Symposium, 2017, Ministry of Health Nutrition & Indigenous Medicine.*
7. **W. M. Manoj S Bandara**, Hemali W W Goonasekera,Vajira H W Dissanayake. Cytogenetic characterization of Sri Lankan patients with de *novo* Myelodysplastic Syndromes. 13th International Congress of Human Genetics, April 03-07 2016, Kyoto International Conference Center, Japan. (Abstracted in the proceedings of the conference)
8. **Bandara WM M S**, Dissanayake V H W, Goonasekera HW W. Cytogenetic characterization of bone marrow and hematopoietic stem cells in primary Myelodysplastic Syndromes**.** Second International conference on Natural Products Genomics and Drug Discovery, "Basic and Translational Research on Cancer and Inflammation" June 23-24 2016, Colombo , Sri Lanka. (Abstracted in the proceedings of the conference p13).
9. K G Somasiri, B W M T J Basnayake, M K O K De Silva, **W M M S Bandara**, A J I S Rathnayake, E P D R Edirisinghe (2015) Comparison of Physical Health Parameters of Cadets and Day Scholars in General Sir John Kotelwala Defence University (KDU). 8th International research conference, technical sessions medicine, 27 – 28 August. General Sir John Kotelawela Defence University. Rathmalana, Sri Lanka.
10. **WMMS Bandara**, AJIS Rathnayake, BWMTJ Basnayake, MKOK De Silva, D. Edirisinghe, B.C.I.J.N. Nanayakkara and KG Somasiri (2014) Military Training Improves Lipid Profile **.** International research conference, technical sessions medicine, 21 – 22 August. General Sir John Kotelawela Defence University. Rathmalana, Sri Lanka, pp 57-58
11. M K O K De Silva[1], K G Somasiri[2], B W M T J Basnayake[1], E P D R Edirisinghe[1], **W M M S Bandara**, A J I S Rathnayake (2014) Title : Reliability and Validity of the Sinhala translation of the Lakaev Academic Stress Response Scale (LASRS-S) (accepted for Poster Presentation at the 127th Anniversary International Medical Congress of the Sri Lanka Medical Association)

12. **W. M. M. S. Bandara** (2012). The Effect of Mutants in the inositol biosynthesis on the therapeutic action of valproate. Annual International Symposium, General Sir John Kotelawela Defence University. 22nd & 23rd August 2012. (Abstracted in the Proceedings of the Conference)
13. **W. M. M. S. Bandara** (2012). Can genetic alterations in inositol biosynthesis affect patients responsiveness to Valproate? Scientific Sessions 2012, Faculty of Medical Sciences, University of Sri Jayawardenepura.p22-23
14. F. Song, J. Loeb, **M. Bandara**, J. Benjamins, R. Lisak (2011). Disease stage and severity in experimental allergic encephalomyelitis modulate expression of gliotrophic and neurotrophic factors. *Multiple Sclerosis Journal* 17: S53–S276
15. **W.M.M.S Bandara** and G. Seneviratne (2006). Importance of interactions among endophytes for plant growth *Proceedings of the 62nd Annual Sessions, Sri Lanka Association for the Advancement of Science*. pp419/D