
CURRICULUM VITAE (March, 2019)

Ms. Sachinithani I. Karunaratne

Teaching and Research Assistant,
Department of Molecular Biology and Biotechnology,
Faculty of Science, University of Peradeniya, Peradeniya, Sri Lanka.

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Passport type photo

Mission

"Be a dynamic professional and aspire to achieve the highest standards in all endeavors undertaken through creativity, innovation and teamwork."

Research Interests

I am interested in the fields of Biomedical Sciences, Reproductive Biology, Oncology, Proteomics, Evolution and Systematics and Animal Genetics.

Educational qualifications

BSc Four-Year (Special) Degree, Major: Molecular Biology and Biotechnology, Faculty of Science, University of Peradeniya, Peradeniya, Sri Lanka; **GPA 3.87/4.00 (First Class Honors);** (December 14, 2016).

Key Courses Followed in BSc: Molecular Genetics, Biochemistry, Enzymology, Recombinant DNA Technology, Molecular Cell Biology, Bioinformatics, Molecular Immunology, Biotechnology, Molecular Biology of Plant and Animal Diseases, Molecular Evolution and Systematics, Plant Reproductive Biology and Physiology, Animal Form and Function, Plant Diversity, Animal Ecology, Advanced Microbiology, Organic Chemistry, Inorganic Chemistry, Analytical Chemistry.

Successfully conducted a 12-month long undergraduate research project as partial fulfillment of the requirements of B.Sc. on Evolution and Phylogeography of Blood Feeding Terrestrial Leeches (*Haemadipsa zeylanica*) of Sri Lanka based on *16s rRNA* Gene Sequencing and secured 4.00/4.00 of GPA under the Supervision of Prof. M.P.B. Meegaskumbura, Department of Molecular Biology and Biotechnology, Faculty of Science, University of Peradeniya, Sri Lanka.

General Certificate of Education, Advanced Level (This is the qualifying examination for University Entrance); Biology- B (Very Good pass > 65%), Chemistry- B, Physics- B; (Department of Examinations, Sri Lanka, 2012).

General Certificate of Education, Ordinary Level (This is the qualifying examination for General Certificate of Education, Advanced Level); Successfully passed the examination with "A" grades (Distinction > 75%) for all nine subjects Mathematics, Science and Technology, Native Language and Literature, English Language, History, Religion, English Literature, Information Technology and Commerce and Business studies (Department of Examinations, Sri Lanka, 2008).

Working Experience

Have successfully served as an O/L Science (English medium) teacher for a period of one year including the duties of a class teacher at Lexicon International School.

Professional Experience

- **Teaching and Research Assistant** (January 19, 2017 – March 26, 2019), Department of Molecular Biology and Biotechnology, Faculty of Science, University of Peradeniya, Peradeniya, Sri Lanka.

Nature of Duties

1. Conducting practical classes for undergraduates and marking the lab reports
 2. Working as a Research Assistant in the Projects currently conducted by the Department
 3. Assisting in experiments of undergraduate research projects and guiding with thesis compiling
 4. Supporting administrative activities
 5. Teaching and guiding students from other faculties and universities who visit the department for Molecular Biology and Biotechnology related lectures/ practicals.
 6. Teaching and guiding school children who occasionally attending the university for educational purposes
- **Teaching Assistant** (January 28, 2017 – March 26, 2019), Postgraduate Institute of Science, University of Peradeniya, Peradeniya, Sri Lanka:
 - MSc/MPhil/PhD Programs in Experimental Biotechnology
 - MSc/MPhil/PhD Programs in Pharmaceutical Botany
 - MSc/MPhil/PhD Programs in Science Education
 - MSc Programs in Nanoscience and Nanotechnology

Nature of Duties

1. Conducting practical classes for postgraduates
2. Assisting and guiding experiments of postgraduate research projects
3. Supporting administrative activities

English Language Proficiency

- Obtained an overall score of **113/120** for the **TOEFL iBT** test with individual band scores of Writing: 29/30, Speaking: 28/30, Listening: 28/30 and Reading: 28/30 (June 2018).
- Achieved an overall score of **308/340** for the **GRE** test with individual band scores of Quantitative sections: 154/170 and Verbal 154/170 together with 3/6 for analytical writing (November 2017).
- Successfully completed the **Diploma in Elocution** conducted by Institute of Western Music and Drama
- Successfully completed **Learner's English course** from preliminary level to Senior Young Learners level with **Distinction passes** at British Council, Kandy, Sri Lanka
- Successfully completed Basic level **Cambridge Exams** with **Distinction Passes** for all the exams
- Successful completion of a two-year **certificate course on English** for Academic Purposes, conducted by English Language Teaching Unit, Faculty of Science, **University of Peradeniya** (2014)
- All the BSc studies were conducted in English medium

- Awarded as **THE SPELLER-2009** at the Interschool Spelling Competition organized by Dharmaraja College, Kandy
- **Distinction ('A') passes** for General English at the **G.C.E. (A/L) Examination, 2012** and **G.C.E. (O/L) Examination, 2008**

Computer Literacy

- Successfully completed the undergraduate research project which involved many data analyses procedures using computer software
- Data management using MS office packages, Data analysis using the statistical packages SAS, Minitab and SPSS.
- Bioinformatics for analyzing and retrieving molecular data.
- Compilation of research project reports, writing research manuscripts, research proposal formulation and standard formatting of seminar presentations, posters and abstracts.
- Successful completion of a course on Computer Science for Academic Purposes, conducted by English Language Teaching Unit, Faculty of Science, University of Peradeniya (2013)
- Able to handle tools in Adobe Photoshop skillfully

Publications

Books

Ananda K, Daundasekera K, Kannangara S, **Karunaratne S**, Ranathunga D, Ranaweera T, Salpadoru T, Thilakarathne N (2017) Glossary in Sinhala Language (a state language in Sri Lanka) Molecular Biology and Biotechnology - Volume 3. Sooriyapathirana S, Rajapakse S. (Eds.) ISBN 978-955-41753-5-8. (All authors have equally contributed in writing the Book. Their names are indicated in alphabetical order)

Journal Articles

2019

Nakandala, N.D.U.S., **Karunaratne, S.I.**, Ranaweera, L.T., Wijesundara, W.W.M.U.K., Udawela, U.A.K.S. and Sooriyapathirana, S.D.S.S. (2019). Assessment of the association between yield parameters and polymorphic sites of the *Ghd7* locus in a core-set of rice cultivars grown in Sri Lanka. *Ceylon Journal of Science*. **48**(2): 121–132. <http://doi.org/10.4038/cjs.v48i2.7616>

Ranathunga, A.P.D.T., Ranasinghe, R.D.G.A., Jayarathne, H.S.M., Thilakarathne, S.M.N.M., **Karunaratne, S.I.**, Ranaweera, L.T., Ananda, G.K.S., Kannangara, S.K., Meepegamage, S.W. and Sooriyapathirana, S.D.S.S. (2019). X-ray Fluorescence Analysis and Consumer Preference Assessment Unveils that Sweet Potato Shoot-Tops are a Safer Alternative to Water Spinach, a Leafy Vegetable Prone to Bioaccumulation of Heavy Metals. *Journal of Agricultural Sciences – Sri Lanka*. **14**(3): 181–200. <http://doi.org/10.4038/jas.v14i3.8602>

Ranaweera, L.T., Jayarathne, H.S.M., Gayathree, T.H.I, **Karunaratne, S.I.**, Kannangara, S.K., Ananda, G.K.S, Ranasinghe, R.D.G.A, Weebadde, C.K., and Sooriyapathirana, S. D. S. S. (2019). Discrimination of the Species and Toxic Heavy Metal Contents of *Alternanthera Sessilis* (Sessile Joyweed), *A. Philoxeroides* (Alligator Weed) and Other Related *Alternanthera* Species. *Sri Lankan Journal of Agriculture and Ecosystems*. **1**(2): 51-66. http://www.rjt.ac.lk/agri/sljae/2019_01_22.html

2018

Karunaratne, S.I., Ranaweera, L.T., Daundasekera, D.M.K.C., Ananda, G.K.S., Kannangara, S.K., Ranathunga, A.P.D.T., Madhukalpani, O.V.S., Weebadde, C.K., and Sooriyapathirana, S.D.S.S. (2018). Assessment of the applicability of morphometric, organoleptic and phylogenetic analyses to differentiate soft and firm flesh bearing trees of Jackfruit (*Artocarpus heterophyllus* Lam.) in Sri Lanka. *Journal of Agricultural Sciences- Sri Lanka*. **13**(3): 200–218. <http://doi.org/10.4038/jas.v13i3.8394>

Aluwihare, Y.C., Chamikara, M.D.M., Dissanayake, D.R.R.P., **Karunaratne, S.I.**, Ananda G.K.S., Kannangara, S.K., Madhukalpani, O.V.S., Sirisena, D.N., Samarasinghe, W.L.G., and Sooriyapathirana, S.D.S.S. (2018). Identification of Pup1 QTL linked DNA marker haplotypes for molecular breeding of phosphorous deficiency tolerant rice varieties. *Journal of the National Science Foundation in Sri Lanka*. 46(4): 497-506. <http://dx.doi.org/10.4038/jnsfsr.v46i4.8480>

Udawela, U.A.K.S., Ananda, G.K.S., **Karunaratne, S.I.**, Sooriyapathirana, S.D.S.S., Li, F., and Liu, Z. (2017). Development of heat tolerant introgression lines and preliminary QTL analysis at flowering stage in *Oryza sativa*. *Journal of the National Science Foundation in Sri Lanka*. 46(3): 255 – 271. <http://doi.org/10.4038/jnsfsr.v46i3.8478>

In Review

Ananda G. K.S., Wijesundara W.W.M.U.K., Herath H.M.V.P. K., **Karunaratne S.I.**, Kannangara S.K., Ranaweera L.T., Rathnayake P.G.R.G., Abeysundara S.P., Udawela U.A.K.S., Weerakoon W.M.W., Weebadde C.K., Sooriyapathirana S.D.S.S. Establishment of a scheme of DNA fingerprinting and sequencing to distinguish the caryopsis samples of the exportable rice cultivars from a panel of mega-varieties. *Sri Lankan Journal of Agriculture and Ecosystems*.

Kannangara, S., **Karunaratne, S.**, Ranaweera, L., Ananda, K., Ranathunga, D., Jayarathne, H., Weebadde, W., Sooriyapathirana, S. Assessment of the applicability of wood anatomy and DNA barcoding to detect the timber adulterations in Sri Lanka. *Nature-Scientific Reports*.

Gayathree, T.H.I., **Karunaratne, S.I.**, Ranaweera, L.T., Jayarathne, H.S.M., Kannangara, S.K.K., Ranathunga, A.P.D.T., Weebadde, C., Sooriyapathirana, S.D.S.S. Green-spinach, red-spinach, and tree-spinach ('three-fold spinach' in Sri Lanka): an insight into phylogenetics and consumer preference. *Emirates Journal of Food and Agriculture*.

Rathnayake, R.M.S.K., **Karunaratne, S.I.**, Ranaweera, L.T., and Sooriyapathirana, S.D.S.S. Battling against Brown Planthopper in rice: genomic selection in backcross breeding to produce resistant cultivars for integrated pest management - a review. *Sri Lankan Journal of Agriculture and Ecosystems*.

Jayarathne, H.S.M., Ranaweera, L.T., Gayathree, T.H.I., **Karunaratne, S.I.**, Ananda, G.K.S., Ranasinghe, R.D.G.A., Thilakarathne, S.M.N.M., Weebadde, C.K., Sooriyapathirana, S.D.S.S. Assessment of the organoleptic properties, species delimits and varietal identities of pennyworts in Sri Lanka. *Journal of National Science Foundation, Sri Lanka*.

Abstracts in Conference Proceedings

Wijesundara, W.W.M.U.K., Ananda, G.K.S., Kannangara, S.K., **Karunaratne, S.I.**, Ranaweera L.T, Udawela, U.A.K.S., C.K. Weebadde, Sooriyapathirana, S.D.S.S. (2018). Establishment of varietal identity of selected exportable and mega production rice genotypes in Sri Lanka using DNA fingerprinting Proceedings of the Postgraduate Institute of Science Research Congress, Postgraduate Institute of Science, University of Peradeniya, Peradeniya, Sri Lanka. <https://www.researchgate.net/publication/3289014>

GenBank Submissions

A total of **96 DNA sequences** have been submitted to GenBank by March 31, 2019.

<https://www.ncbi.nlm.nih.gov/nuccore/?term=karunaratne+SI>

https://www.ncbi.nlm.nih.gov/popset/1335762422	(5 sequences)
https://www.ncbi.nlm.nih.gov/popset/1482013116	(5 sequences)
https://www.ncbi.nlm.nih.gov/popset/1690550846	(8 sequences)
https://www.ncbi.nlm.nih.gov/popset/1690550862	(8 sequences)
https://www.ncbi.nlm.nih.gov/popset/1464291567	(5 sequences)
https://www.ncbi.nlm.nih.gov/popset/1569273937	(5 sequences)
https://www.ncbi.nlm.nih.gov/popset/1635377074	(12 sequences)
https://www.ncbi.nlm.nih.gov/popset/1635377086	(12 sequences)
https://www.ncbi.nlm.nih.gov/popset/1635377098	(12 sequences)
https://www.ncbi.nlm.nih.gov/popset/1594515735	(12 sequences)
https://www.ncbi.nlm.nih.gov/popset/1714609490	(6 sequences)
https://www.ncbi.nlm.nih.gov/popset/1752311863	(6 sequences)

Ongoing Research Programs

1. **Karunaratne, S.I.**, Ranaweera, L.T., Senevirathne, G. and Meegaskumbura, M. Evolution and phylogeography of blood feeding terrestrial leeches (*Haemadipsa zeylanica*) of Sri Lanka based on *16s rRNA* gene sequencing (**in writing**).
2. Ranaweera, L.T., **Karunaratne, S.I.**, Senevirathne, G. and Meegaskumbura, M. Population genetic Structure and Niche Dimension of *Hydrophylax gracillis* (Anura: Ranidae) of Sri Lanka (**in writing**).
3. Gayathree, T.H.I., **Karunaratne, S.I.**, Ranaweera, L.T., Jayarathne, H.S.M, Thilakarathne, S.M.N.M, Ranathunga, A.P.D.T., Weebadde, C.K. and Sooriyapathirana, S.D.S.S. Assessment of the variations in photosynthesis and consumer preference on field and greenhouse grown *Amaranthus* spp. and their species delimits based on DNA barcoding (**in writing**).

Awards and Honors

University Award for the Academic Excellence (2016) for the meritorious performance in B.Sc. program, Awarded at the General convocation-2016, University of Peradeniya, Sri Lanka

Professional Training

- Successful completion of a course on Bioinformatics which covered the sections on phylogenetic analysis and usage of NCBI, ExPASy, EMBL and BLAST for analyzing and retrieval of molecular data (2015)
- Successful completion of the Scientific Writing course which included the sections on project proposal writing, abstract writing, interpretation of results and scientific manuscript writing

- Successful completion of a course on seminar presentation; conducted an oral presentation on "Evolution of Sex chromosomes and Dinosaur Extinction" and secured 4.00/4.00 GPA at Department of Molecular Biology and Biotechnology, Faculty of Science, University of Peradeniya, Sri Lanka

Technical Skills related to Molecular Biology

- DNA extraction using CTAB method and kits, DNA band separation using Agarose and Polyacrylamide Gel Electrophoresis methods, Spectroscopy: UV/Visible
- Performing sanger sequencing for PCR products
- General Molecular Biology procedures including PCR methods
- Protein extraction and Purification methods, SDS-PAGE
- Microbiological methods for culturing and maintaining Bacterial and Fungal cultures
- Molecular systematics, phylogenetic analysis using MEGA, PoPart, PAUP and MrBayes software
- Performing statistical analyses using SAS and Minitab software
- Cloning of human/ plant DNA into plasmid vectors and recombinant DNA isolation

Skills and Achievements

- Participated in **Australian Chemistry Quiz** a global level competition organized annually by the Australian National Chemical Institute under two divisions (Junior and Senior) where was I awarded with DISTINCTION passes (Total marks >90/100) in both divisions (2008 & 2010).
- Awarded with the "Environmental Award" at the **All Island Science project & Research Competition** 2009 held by Sri Lanka Association for Advancement of Science. This competition is the only national-level competition for young scientists from around the country competing in various categories. The environmental category represented innovations related to the global environmental crisis.
- Selected to Top 05 Competitors in both First and Second **Sri Lanka Earth Science Olympiad Competition**. This was the first time an Olympiad competition was conducted for Geology (a subject not incorporated in the secondary education curriculum). Students from all the country's districts competed, and the top competitors then represented the international level competitions.
- Participated in the **All Island School Science Program** conducted by Institute of Fundamental Science (IFS), Kandy held for selected students who achieved best results for GCE O/Ls, island-wide where they were introduced to advanced tools in science.

Extracurricular activities

- The Assistant Junior Treasurer (2015) and Junior Treasure (2016) of the Molecular Biology and Biotechnology Association of University of Peradeniya, Sri Lanka. [MBB Association- University of Peradeniya, Sri Lanka](#)
- The Secretary (2014) and the Editor (2015) of the Zoologist's Association of University of Peradeniya, Sri Lanka. [ZAUP- University of Peradeniya, Sri Lanka](#)
- A member of the Botanical Society at Faculty of Science, University of Peradeniya, Sri Lanka (2014/2015) [BOTSOC- University of Peradeniya, Sri Lanka](#)
- Member of School Prefect Board for the years 2009-2010, Mahamaya Girls' College Kandy, Sri Lanka, a leading school for primary and secondary education. A School Prefect board is represented by a selected set of highly recommended students from Grade 12 and 13 batches annually to assist with school administration and maintaining discipline. [Mahamaya Girls' College, Kandy, Sri Lanka](#)

- Member of School Oriental (Eastern) Music group and won numerous awards including all island 1st place, Sri Lanka. All island competitions include competitors from all around the country, and winners become the national champion.
- Member of Girl Guiding (Girl scouting) Association of Sri Lanka with the President's award. A globally recognized association and the President's award is the ultimate medal (highest qualification) awarded only to a scout excelling in a wide variety of skills required for sustenance, perseverance and survival, tested over three years. [SLGGA, Sri Lanka](#)
- Member of School Drama group for All Island Shakespeare Drama Competitions, Sri Lanka. Shakespeare Drama Society annually conducts competitions based on popular drama scripts by Shakespeare (English Medium) for drama clubs with talented young actors and actresses all around the country. [Shakespeare, Sri Lanka](#)
- Member of many School Associations and Clubs of Mahamaya Girls' College Kandy, Sri Lanka, held committee posts and won awards at competitions. These are student associations for developing talents such as poetry, short stories, drama, speech, media etc. Each year excelling students will be chosen by fellow members as committee members/student representatives for interschool competitions.

Sports

- Member of the school's Chess Team– Mahamaya Girls' College Kandy, Sri Lanka and have represented the school in the national level competitions in years 2003 and 2004 where all the top chess champions worldwide compete for the title of National champion.
- Member of the school's Netball, Cricket and Volleyball teams- Mahamaya Girls' College Kandy, Sri Lanka. Have played during Inter-house sports meets where leading players in the whole school compete.

Referees

Prof. S.D.S.S. Sooriyapathirana

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Prof. R.G.S.C. Rajapakse

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I hereby certify that the particulars submitted by me in this application are true and accurate. I am aware that if any of these particulars are found to be false or inaccurate, I am liable to be disqualified before selection and to be dismissed without any compensation if the inaccuracy is detected after appointment.

S.I. Karunaratne

Date: March 26, 2019