

F83, Jayapaya,  
Thulhiriya, Sri Lanka

+94-071-9988959  
susanthij@pdn.ac.lk/jsusanthi@yahoo.com

## EDUCATION

- **Ph.D. in Chemistry**, University of Kansas, April 2013
  - Thesis title: Phosphate Tether-Mediated Synthetic Studies–Applications in Natural Products Synthesis (Prof. Paul R. Hanson)
- **B.Sc. Special degree in Chemistry (First Class–Honors) *Summa cum laude***, University of Peradeniya, Sri Lanka 2005
  - Thesis title: Investigation of the differences in chemical constituents between edible and non edible *shorea* species

## RESEARCH EXPERIENCE

### Awards for research or innovative projects -(principal investigator or co-principal investigator)

1. Source: National Science Foundation RG/2016/BS/02  
Title: Synthesis of biologically active natural product libraries of 3 $\beta$ -[( $\alpha$ -L arabinopyranosyl)oxy]olean-12-en-28-oic acid.  
Role: Co-Principal Investigator  
Period: 2016-todate
2. Source: University Research Grant-B/Sc/2016/CH/URG/52/S/CL  
Title: Development of nutraceutical for diabetes and cholesterol reduction with scientific validation from the selected medicinal plant extracts  
Role: Principal Investigator  
Period: 2016-todate
3. Source: National Research Council-NRC/17/33  
Title: Combined therapeutic drug leads for antidiabetic and anti-hyperlipidaemic treatments from the selected combined medicinal plants.  
Role: Principal Investigator  
Period: 2017-todate

### Recent MSc. MPhil and PhD theses being supervised: University of Peradeniya.

1. Ms WGD Wickramasinghe (PhD-2015-todate): Studies on bioactivities and chemical constituents of *Holarrhena mitis* and synthesis of structural analogues of 6 $\beta$ -hydroxy betunolic acid.
2. Mr. SNT Sampath (Mphil-2018-todate): Combined therapeutic drug leads for antidiabetic and anti-hyperlipidaemic treatments from the selected combined medicinal plants.
3. Ms. J. M. Jayamini Jayasundara (MPhil-2016-todate): Synthesis of biologically active natural product libraries of 3 $\beta$ -[( $\alpha$ -L arabinopyranosyl)oxy]olean-12-en-28-oic acid.

4. Ms. Dinushi Weerasinghe (MSc-2015-todate): Studies on Anti-oxidant and Anti-inflammatory activities of *Thysanolaena latifolia*.
5. D.D.A.D.U. Deshapriya: (MSc-2017-todate): Effect of ethephon and ethylene on antioxidant activity and total phenolic, total flavonoid and vitamin c contents in commercially valuable fruits in Sri Lanka.
6. Mr. H.A. Senanayake (MSc-2017-todate): Analysis of cinnamon bark powder tablets prepared for diabetic patients.
7. Ms Donisha\_Liyanagama (MPhil-2016): Development of nutraceutical for diabetes and cholesterol reduction with scientific validation from the selected medicinal plant extracts- completed 2018
8. Ms. S.M. Hinnawala (MSc-2015): Preparation of PPD free herbal hair colour and studies of seven plant extracts.-completed 2019.
9. Mr. Asanka Priyadarshana (MSc-2014)- Antimicrobial, antioxidant, cytotoxic activity and phenolic content of *acrotrema uniflorum*- completed on 2016.

**Doctoral Research:** University of Kansas, 01-2008– 04-2013

- Total synthesis of natural products [strictifolione (*anti*-fungal) and (6*R*)-6-[(4*R*,6*R*)-4,6-dihydroxy-10-phenyldec-1-enyl]-5,6-dihydro-2H-pyran-2-one (*anti*-fungal)]
- Synthetic Methodology (studies towards the total synthesis of fostriecin and *epi*-fostriecin and their analogs, Franklinolide).
- Development of Sequential one pot, multi-step reactions
- Organophosphorous Chemistry

**Undergraduate Research:** University of Peradeniya, Sri Lanka

- Investigation of the differences in chemical constituents in edible and non-edible *shorea* species (2004)
- Investigation of chemistry and bioactivity of the genus *Hortonia* (2006)

**SPECIALIZED TRAINING / SKILLS**

- Bio activity studies of medicinal plants and bio-assay guided fractionation
- Library synthesis of bio active natural triterpenoids.
- Reaction methodology development
- Development of Sequential one pot, multi-step reactions
- Multi step reactions (5-14 steps; microgram – gram scale synthesis)
- Utilization of Microwave Systems for organic synthesis - Biotage Initiator personal chemistry system (Reaction methodology development)  
Utilization of Biotage SP / Isolera purification systems for compound purification.
- 1D & 2D NMR / IR / MS / GC / HPLC / LCMS / ChemDraw / Mestrenova /Scifinder
- Generating Presentations / Scientific Reports / Grant writing / Manuscript preparation
- Maintaining effective communication with team members (chemists / molecular biolo-

gists/Biologist – NCI-USA, NCGC-USA / external collaborators) in collaborative projects

## AWARDS & HONORS

- The H. P. Cady Scholarship for Excellent Performance for First Year Graduate student 2008 - Department of Chemistry, University of Kansas.
- Sultanbawa Prize for the Best Performance (GPA = 4.00) in Organic Chemistry in the B.Sc. Special Degree Program 2005–Department of Chemistry, University of Peradeniya, Sri Lanka.
- Award for Academic Excellence in B.S. (Honors) Chemistry Program – 2005, University of Peradeniya, Sri Lanka.

## AFFILIATIONS

American Chemical Society (Organic / Medicinal Chemistry division) 2008 onwards

## TEACHING / MENTORING EXPERIENCE

- **Senior Lecturer**–Department of Chemistry, Faculty of Science, University of Peradeniya. (2014-todate)  
CH 222 Organic Synthesis; CH 324- Advanced Organic Chemistry; CH 326- Advanced Spectroscopy; CH 329- Advanced Organic Chemistry laboratory; CH 425-Physical Organic Chemistry; CH 426- Natural Product Chemistry
- **Member of the teaching panel of Msc in Industrial Chemistry and MSc in Pharmaceutical Botany** - Postgraduate Institute of Science, University of Peradeniya(2014-todate)
- **Lecturer**–Department of Chemistry, Faculty of Science, University of Peradeniya. (2007 to 2014 ).
- **Assistant Lecturer**–Department of Chemistry, Faculty of Science, University of Peradeniya. (2006-2007).
- **Temporary Lecturer**–Department of Chemistry, Faculty of Science, University of Peradeniya. – 200 levels and 300(Special) Organic Chemistry Laboratory (06/2005-12/2006).
- **Discussion Leader** – CH 221 (Synthetic Organic Chemistry)- Dept. of Chem., Faculty of Science, University of Peradeniya. (2006/2007).
- **Teaching Assistant:** University of Kansas, USA
  - CHEM 624 Organic Chemistry I (Fall – 2009)
  - CHEM 626 Organic Chemistry II (Spring 2010)
  - CHEM 625 Organic Chemistry I Laboratory (2008)
  - CHEM 763 Organic Synthesis I (Graduate) (2008)

## Mentoring:

- University of Kansas, USA
  - Cornelius Ndi (graduate; 2012-2014)
  - Coulter Cranston (undergraduate; 2012)
  - Vanessa Breslin (Undergraduate; 2011)-currently attending Chemistry Graduate School- University of California, Los Angeles.

### WORKSHOPS ATTENDED

- Workshop on “Handling Students’ Issues”- Staff Development Centre, University of Peradeniya.
- Workshop on “Contemporary Medicinal Chemistry”; U. of Kansas, Dept. of Medicinal Chemistry. Prof. Lester E. Mitscher (2008/2009).

### OTHER RELEVANT ACTIVITIES/RESPONSIBILITIES

- Secretary- Board of Studies in Chemical Sciences (2017-todate)
- Co-Coordinator- MSc in Industrial Chemistry (2015-todate)
- Member of the Editorial Board-PGIS Research Highlights (2017, 2018)
- Member of the Organizing Committee-PGIS Research Congress (2015, 2016)
- Member of Organizing Committee - University of Peradeniya International Research Sessions (2016, 2019)
- Member of the organizing committee of the Asian Symposium on Medicinal Plants, Spices and Other Natural Products XVI. (2018)
- Senior student counselor- (2016, 2017)
- Deputy Proctor -2015
- Volunteer Student counselor -2019

### PUBLICATIONS

#### Book Chapters:

- Hanson, P. R.; Asad, N.; Zang, Q.; **Jayasinghe, S.**; Markley, J. (authors with equal contributions) Acylation-type Reactions. Inorganic Acid Derivatives. In *Comprehensive Organic Synthesis 2nd Edition*, Volume 6 Heteroatom Manipulation. **2014**, 479–554.
- Hanson, P.; Jayasinghe, S.; Maitra, S.; Markley, J. L. (authors with equal contributions) Phosphate Tethers in Natural Product Synthesis. *Topics in Current Chemistry* **2015**, 361, 253–271.

**PEER REVIEWED PUBLICATIONS:**

- Wickramasingha, W. G. D.; **Jayasinghe S.**; Karunaratne, D. N.; Liyanapathirana, V.; Ekanayake, E.W.M.A.; Karunaratne V. Structure-activity relationship of 6 $\beta$ -hydroxy betunolic acid and derivatives against *Staphylococcus aureus*, MRSA and *Escherichia coli*. **2019**, *Journal of Pure and Applied Chemistry* (Manuscript submitted).
- **Jayasinghe, S.**; Liyanagamage, D.S.N.K.; Karunaratne, V.; Attanayake A.P. Possible effect of cooking practices on the potential release of garcinol from fruit rinds of endemic *Garcinia queasita* Pierre. **2019**, *Food Chemistry*, (Manuscript submitted)
- Wickramasingha, W. G. D.; Wijendra, W. A. S.; Karunaratne, D. N.; Liyanapathirana, V.; Ekanayake, E.W.M.A.; **Jayasinghe, S.** Karunaratne. V. Bioactivities of *Holarrhena mitis* (Vahl) R. Br. ex Roem. & Schult. *Ceylon Journal of Science*, **2018**, 47(3), 269-274.
- **Jayasinghe, S.**; Siriwardhana, A.; Karunaratne, V. Natural iron sequestering agents: their roles in nature and therapeutic potential. *Int J Pharm Pharm Sci*, **2015**, 7, 9, 8-12.
- Hanson, P. R.; **Jayasinghe, S.**; Maitra, S.; Ndi, C. N.; Chegondi, R. A Modular Phosphate Tether-Mediated Divergent Strategy to Complex Polyols. *Beilstein J. Org. Chem.* **2014**, 10, 2332–2337. **PMCID**: PMC4187035. Thematic Series of "Organophosphorus chemistry".
- **Jayasinghe, S.**; Venukadasula, P. K. M.; Hanson, P. R. An Efficient, Modular Approach for the Synthesis of (+)-Strictifolione and a Related Natural Product. *Org. Lett.* **2014**, 16, 122–125. **NIHMSID** 545897 **PMCID**: PMC4179430.
- McParland, J.; **Mudiyansele, S. J.**; Hanson, P. Total synthesis. *Chemtracts* **2008**, 21, 475–483.
- Karunaratne, V.; Jayalal, U.; **Jayasinghe, S.**; Wijesundara, S. Lichens, drugs and butterflies: tales of discovery from Sri Lanka. *Chem. Rev.* (Deddington, United Kingdom) **2009**, 19, 19–23.
- Ratnayake, R.; **Jayasinghe, S.**; Bandara, B. M. R.; Andersen, R. J.; Karunaratne, V. Complete 2D NMR assignment and antifungal activity of ishwaraane isolated from *Hortonia*, a genus endemic to Sri Lanka. *Journal of the National Science Foundation of Sri Lanka* **2008**, 36, 109–112.

**PRESENTATIONS:**

- (1) Wickramasingha, W.G.D.; Karunaratne, V.; Wijendra, W. A. S.; **Jayasinghe, S.** Antifungal and cytotoxic activity of *Holarrhena mitis* R.Br. *PGIS Research Congress*, 9-10 October 2015, Post Graduate Institute of Science, University of Peradeniya, Sri Lanka. P 96.
- (2) Wickramasingha, W. G. D.; Kulatunga, K.; Wijendra, W. A. S.; Karunaratne, D. N.; **Jayasinghe S.**; Karunaratne, V. Antimicrobial, antioxidant, cytotoxic activities and polyphenolic content of *Holarrhena mitis* R.Br. *Peradeniya University International Research Session*, 5-6

November 2015, Post Graduate Institute of Science, University of Peradeniya, Sri Lanka. P 364.

- (3) Wickramasingha, W. G. D.; Karunaratne, D. N.; Liyanapathirana, V.; Karunaratne V.; **Jayasinghe S.** Antibacterial activity of C17 modified esters of (1R,3aS,5aR,5bR,7R,7aR,11aR,11bR,13aR,13bR)-7-hydroxy-5a,5b,8,8,11a pentamethyl-9-oxo-1-(prop-1-en-2-yl)icosahydro-1H-cyclopenta[a]chrysene-3a-carboxylic acid. 5<sup>th</sup> *International Conference on Science, Technology, Management and Humanities*, 2-3 March 2018. WP Hotel, Kuala Lumpur, Malaysia. P 2.
- (4) Wickramasingha, W. G. D.; Wijendra; W.A.S.; Karunaratne, D. N.; Ekanayake, E.W.M.A.; Karunaratne V.; **Jayasinghe S.** Bioactivities of *Holarrhena mitis* (Vahl) R.Br. *International Conference on Health Sciences*, 7-9 October 2018, Faculty of Medicine, University of Sri Jayewardenepura, Sri Lanka. P 94.
- (5) Wickramasingha, W. G. D.; Karunaratne, D. N.; Ekanayake, E.W.M.A.; Karunaratne V.; **Jayasinghe S.** Structure activity relationship of 6-hydroxy betunolic acid against *Staphylococcus aureus* and MRSA. *Eurasia Conference on Chemical Sciences*, 5-8 September 2018, University of Sapienza, Rome. P 60.
- (6) Wickramasingha, W.G.D.; **Jayasinghe, S.**; Karunaratne, D. N.; Liyanapathirana, V.; Ekanayake, E.W.M.A.; Karunaratne, V. Structure activity relation of 7-hydroxy betunolic acid against *Escherichia coli*, *Staphylococcus aureus* and MRSA. *Asian Symposium on Medicinal Plants, Spices and Other Natural Products XVI*, 12-14 December 2018, Colombo, Sri Lanka. P 254.
- (7) Liyanagamage, D.S.N.K.; Karunaratne, V.; Attanayake, A.P.; Jayasinghe, S. Evaluation of therapeutic efficacy of selected medicinal plant extracts mixture in stz-diabetic rats. Proceedings of 5<sup>th</sup> annual scientific sessions of Sri Lanka association for laboratory animal science. **2018** P.37
- (8) Liyanagamage, D.S.N.K.; Karunaratne, V.; Attanayake, A.P.; Jayasinghe, S. Toxicity assessment of antidiabetic medicinal plant extract mixture in healthy wistar rats. Proceedings of 7<sup>th</sup> Young scientists forum symposium, **2018** p.74
- (9) Liyanagamage, D.S.N.K., Karunaratne, V., Attanayake, A.P. and Jayasinghe, S. Acute Anti-hyperglycemic Activity of a Selected Medicinal Plant Extract Mixture in Streptozotocin Induced Diabetic Rats. World Academy of Science, Engineering and Technology, International Journal of Medical and Health Sciences, **2018** p. 51
- (10) Liyanagamage, D.S.N.K.; Karunaratne, V.; Attanayake, A.P.; Jayasinghe, S. Effect of water: acetone extract of selected Ayurvedic polyherbal remedy on serum lipid profile in diabetic rats. Proceeding of 1<sup>st</sup> Sri Lankan Asian network of research on antidiabetic plants regional seminar on herbal approaches in combating diabetes and common tropical diseases, **2018** p.50

- (11) Liyanagamage, D.S.N.K.; Karunaratne, V.; Attanayake, A.P.; Jayasinghe, S. Jayasinghe Evaluation of acute and sub chronic toxicity of medicinal plant extract mixture in healthy Wistar rats. *Ruhuna Journal of Medicine*, **2017** p.27.
- (12) Liyanagamage, D.S.N.K.; Karunaratne, V.; Attanayake, A.P.; Jayasinghe, S. Evaluation of hypoglycaemic activity of a medicinal plant extract mixture in healthy rats. *Proceedings of International symposium on traditional and complementary medicine*, **2017**. p.110
- (13) Liyanagamage, D.S.N.K.; Karunaratne, V.; Jayasinghe, S. Bioassay guided isolation of active compounds from hexane extract of fruits of *garcinia quasita*. *Proceedings of i-PURSE, University of Peradeniya International Research Sessions*, **2016** p.71
- (14) Keppetipola, N.M., **Jayasinghe, J.M.S.** Comparative studies of bio activity and chemistry of combined plant extracts. *IPURSE, University of Peradeniya*, November 4<sup>th</sup> and 5<sup>th</sup> 2016. (Oral).
- (15) Perera, H.A.I., Athapattu, U.S., Rajapakse, S., **Jayasinghe, J.M.S.** Bio assay guided isolation of anti-bacterial active compounds from whole plant extract of *Eleusine indica*. *IPURSE, University of Peradeniya*, November 4<sup>th</sup> and 5<sup>th</sup> 2016. (Oral).
- (16) Liyanagamage, D.S.N.K., Karunaratne, V., **Jayasinghe, J.M.S.** Bioassay guided isolation of active compounds from hexane extract of fruits of *garcinia quasita*. *Proceedings of i-PURSE, University of Peradeniya International Research Sessions*, November 4<sup>th</sup> and 5<sup>th</sup> 2016. (Oral). p.71
- (17) W.G.D.Wickramasingha, V. Karunaratne, W.A.S. Wijendra, **S. Jayasinghe**. *Antifungal and cytotoxic activity of Holarrhena mitis*, *PGIS research congress*, October 9<sup>th</sup> and 10<sup>th</sup> 2015.(oral).
- (18) Y.A Priyadarshana, M.P. Thomas, A. Wickramasinghe, **S. Jayasinghe**, S. Rajapakse. *Antimicrobial, antioxidant, cytotoxic activity and phenolic content of Acrotrema uniflorum*, *PGIS research congress*, October 9<sup>th</sup> and 10<sup>th</sup> 2015.(Oral).
- (19) W. G. D. Wickramasingha, K. Kulatunga, W. A. S. Wijendra, D. N. Karunaratne, **S. Jayasinghe**, V. Karunaratne. *Antimicrobial, antioxidant, cytotoxic activity and polyphenolic content of holarrhena mitis*. *IPURSE, University of Peradeniya*, November 5<sup>th</sup> and 6<sup>th</sup> 2015. (Oral).
- (20) **Jayasinghe, S.** Hanson, P. R. Phosphate Tether-Mediated Synthetic Studies: Applications in Natural Products Synthesis. *Chemistry Department, University of Kansas, United States*, November 1<sup>st</sup>, 2012 (Oral)
- (21) **Jayasinghe, S.**; McParland, J. P.; Hanson, P. R. Phosphate Tether–Mediated Approaches Towards the Total Synthesis of Fostriecin and 8-*epi*-Fostriecin. 244<sup>th</sup> ACS National Meeting, Philadelphia, United States, August 19–23, 2012 (Oral)
- (22) **Jayasinghe, S.**; McParland, J. P.; Hanson, P. R. Phosphate Tether-Mediated Synthetic Studies Towards the Total Synthesis of Fostriecin and Analogs. 46<sup>th</sup> Midwest/39<sup>th</sup> Great Lakes Joint Regional ACS Meeting, St. Louis, United States, October 19–22, 2011 (Oral).
- (23) **Jayasinghe, S.**; McParland, J. P.; Hanson, P. R. Synthetic Studies to Fostriecin and Analogs. 242<sup>nd</sup> ACS National Meeting, Denver, United States, August 28–September 01, 2011 (Poster)
- (24) **Jayasinghe, S.**; McParland, J. P.; Hanson, P. R. Phosphate Tether-Mediated Cross Metathesis Studies in Application of Bioactive Natural Products and Analogs Synthesis. 42<sup>nd</sup>

*National Organic Chemistry Symposium. Princeton University, United States, June 5–9, 2011 (Poster).*

- (25) **Jayasinghe, S.**; McParland, J. P.; Hanson, P. R. Phosphate tether -mediated strategy Toward the Total Synthesis of Fostriecin. 49<sup>th</sup> Annual MIKI Meeting, University of Kansas, Lawrence, Kansas, United States, April 8–10, 2011 (Poster).
- (26) **Jayasinghe, S.**; McParland, J. P.; Whitehead, A.; Hanson, P. R. Metathesis Strategies Toward the Total Synthesis of Fostriecin: A Potent and Selective PP2A inhibitor. 239<sup>th</sup> ACS National Meeting, San Francisco, United States, March 21-25, 2010 (Poster)
- (27) **Jayasinghe, S.**; McParland, J. P.; Hanson, P. R. Efforts Towards the Total Synthesis of Fostriecin: A Potent and Selective PP2A Inhibitor. NIH Training Grant Symposium – University of Kansas, October 24<sup>th</sup>, 2009 (Poster).
- (28) **Jayasinghe S.**; Waetzig, J. D.; Whitehead, A.; McParland, J. P.; Thomas, C. D.; Venukadasula, P.; Banning J.; Hanson, P. R. Temporary Phosphate Tethers: Rapid Access to Advanced Polyol Synthons in Natural Product Synthesis. NIH Training Grant Symposium – University of Kansas, October 24<sup>th</sup>, 2008 (Poster).

**REFERENCE:**

- (1) Prof. Paul R. Hanson  
Department of Chemistry  
University of Kansas  
Malott Hall 4027  
1251 Wescoe Hall Drive  
Lawrence, KS 66045-7582  
[phanson@ku.edu](mailto:phanson@ku.edu)  
Office (785) 864-3094  
FAX (785) 864-5396.
- (2) Prof. Veranja Karunaratne  
Department of Chemistry,  
Faculty of Science,  
University of Peradeniya.  
Sri Lanka  
Tel: + 94 114 650 502  
Fax: + 94 114 650 532  
Email: [veranjak@slintec.lk](mailto:veranjak@slintec.lk); [veranjak@slintecacademy.lk](mailto:veranjak@slintecacademy.lk)