

# THE NATURAL PRODUCTS INSTITUTE

Dr. Rupika Delgoda, D.Phil. (Oxon), B.Sc. (Hons.) – Executive Director



## WORK OF THE INSTITUTE

This academic year saw staff and students of NPI distinguishing themselves in various spheres of research. Dr. Sheena Francis was seconded by the USAID funded Zika AIRS project, ZAP as an entomology manager for garnering island-wide data on insecticidal resistance of *Aedes Aegypti* mosquitoes. Much effort was spent on building the Mosquito Control and Research Unit (MCRU) on campus (both raising funds and drawing operational documents), which is a collaboration between UWI and Ministry of Health and Wellness. Dr. Picking commenced chairman duties for organizing the 2020 international conference on Society for Economic Botany (SEB) and he also joined Professor Delgoda to work on the Food and Drug Act amendment to include a natural health product with the National Commission of Science and Technology (via the National Nutraceutical Industry subcommittee). At the same time, research projects focused on the development of traditional medicines and natural products with cytotoxic value continued with on-going international collaborations.

This year also saw the initiation of a partnership between NPI and Field Trip Ventures, Canada. This unique academia-industry venture is a first of its kind for NPI, the Faculty and indeed the Mona campus, and we look forward to its fruition and the research benefits that it promises to bring.

## PAPERS PRESENTED

- **Delgoda R.**, Health and wellness from Jamaica's biodiversity, National Biodiversity Conference, Kingston Jamaica, October 17, 2018.
- **Wauchope S.**, **Wooten J.**, **Mavingire N.**, **Campbell P.**, **Watson J.**, **Brantley E.**, **Gossell-Williams M.** & **Delgoda R.**, The Impact of dibenzyl trisulfide on breast cancer cell lines derived from African American patients and on cytochrome P450 1 enzymes, 21st CAS Conference, Kingston Jamaica, November 27–30, 2018.

- **Morrison S., Watson, J., Porter R., & Delgoda R.** The potential chemo-preventive value of a prenylated flavonoid isolate of Jackfruit, 21st CAS Conference, Kingston Jamaica, November 27–30, 2018.
- **Picking D.**, The value of medicinal plants. Jamaican Horticultural Society, Kingston Jamaica, September 29, 2018.
- **Picking, D.**, Vandebroek, I., Medicinal plant knowledge in Portland and Kingston, Jamaica: An historic comparison. 60th Annual Meeting of the Society for Economic Botany: The Future of Forests. University of Cincinnati, Ohio USA, June 2–6, 2019.

### Other Presentations

- **Wauchope S.**, “Evaluating the effect of fresh *Petiveria alliacea L.* on the viability of African American derived breast cancer cell lines and the mRNA expression of Cytochrome P450 enzymes”. Departmental Seminar, Basic Medical Sciences, October 4, 2018.
- **Foster K.**, “Traditional use of *Annona muricata* among cancer patients in Jamaica and its anticancer potential”. Departmental Seminar, Basic Medical Sciences, October 11, 2018.
- **Morrison I.**, “Characterizing the interaction of Artocarpin, an isolate of *Artocarpus heterophyllus* (Jackfruit) with CYP1 Enzymes”. Departmental Seminar, Basic Medical Sciences, October 18, 2018.
- **Picking D.**, “Jamaican Traditional Medicine” Refuge Apostolic Temple, Maxfield Avenue, Kingston, Jamaica, November 29, 2018.
- **Picking D., Rose P.**, “Proposed plans for 2020 Joint conference in Kingston Jamaica to be held May 31– June, 2020” Committees of the Society of Economic Botany and the International Society of Ethnobiology, University of Cincinnati, Ohio USA, June 2–6, 2019.
- **Gutierrez C., López Mejía K., Nuñez Sandino I., Murrillo E., Orellana G., Chanquin S., Francis S., & Alzate G.**, “Practical Manual for the Operation of an Insectary: *Aedes aegypti* Rearing Procedures and Basic Principles of Biosafety”. Zika AIRS Project – ZAP. Abt Associates, Rockville, Maryland USA. Document presented to Ministries of Health in the Caribbean and Latin American Region, as part of USAID funding to reduce mosquito diseases in the region, 2019.
- **Wauchope S.**, “Evaluating the Possible Anticancer and Chemopreventive Potential of *Petiveria alliacea L.* in Breast Cancer” PhD Transfer, Department of Biochemistry. February 14, 2019.
- **Delgoda, R.**, “Natural Products Institute, UWI”, Emerging Leaders Canada Dialogues’, Duke of Edinburgh, Canada, March 28, 2019.

- **Attallah O.**, “Secondary Metabolites Profiling of Governor Plum (*Flacourtia indica*) and their Potential Anti-Oxidant and Anti-Proliferative Properties”, Department of Basic Medical Sciences, March 21, 2019.

#### **Public Seminar Organized**

- “Minimizing Mosquito Mayhem Science and Solution” hosted by the Natural Products Institute & the Department of Life Sciences, Science for Today free public forum, Faculty of Science and Technology UWI, February 28, 2019.

#### **PUBLICATIONS**

- **Picking, D.**, Chambers, B., Barker, J., Shah, I., Porter, R., Naughton, D., & **Delgoda, R.** (2018). Inhibition of cytochrome P450 activities by extracts of *Hyptis verticillata* Jacq.: Assessment for potential Herb-drug interactions. *Molecules*, 23(2), 430.
- McNeil, M. J., Porter, R. B., Rainford, L., Dunbar, O., **Francis, S.**, Laurieri, N., & **Delgoda, R.** (2018). Chemical composition and biological activities of the essential oil from *Cleome rutidosperma* DC. *Fitoterapia*, 129, 191–197.
- Vandebroek, I., **Picking, D.**, Aiken, S., Lewis, P. A., Oberli, A., Mitchell, S., & Boom, B. (2018). A Review of Coralilla (*Antigonon leptopus*): An Invasive and Popular Urban Bush Medicine in Jamaica. *Economic botany*, 72(2), 229–245.
- Nwokocha, M., Romero, C.A., Holder, C., Whyllie, N., Wong, H., Lietch, J., Wilks, R., Hosang, M., **Francis, S.**, Brown, P.D. & Paul, T., 2019. Blood Pressure Screening Campaign in Jamaica: May Measurement Month 2017. *American journal of hypertension*. <https://doi.org/10.1093/ajh/hpz117>.
- **Picking D., Delgoda R., & Vandebroek I.**. “*Traditional knowledge systems and the role of traditional medicine in Jamaica.*” CAB Reviews (accepted for publication 31st July 2019).

#### **Technical Reports**

- **Delgoda R., Robinson D., & Lindo J.** Mosquito Control and Research Unit (Terms of Reference) in collaboration with Ministry of Health, 2019.
- **Delgoda R. & Picking D.** Food and Drug Act led by the National Commission of Science and Technology, Subcommittee in National Nutraceutical Industry, 2019 – amendments on-going.

## INCOME GENERATION

### Grants

- **Morrison I., Wauchope S., Foster K & Delgoda R**, “Investigating anti-cancer and chemopreventive properties of seven Jamaican natural extracts and phytochemicals”, Ministry of Health Research Grant Awards (J\$1.5M), 2018–2019.

### Other Awards

- **Francis S. & Delgoda R.**, equipment and reagents for the UWI Insectary, USAID/ZIKA project (US\$30,000), 2019.

## PUBLIC SERVICE

### Rupika Delgoda

- Deputy Chair, Natural History Museum of Jamaica
- Member, Steering Committee, National Nutraceutical Industry, Jamaica
- Board member, Jamaica Conservation Partners
- Member, Cannabis Research and Development Evaluation and Monitoring Committee
- Member, African Caribbean Cancer Consortium
- Secretary, International Society for the Development of Natural Products
- Member, International Society for Study of Xenobiotics
- Member, American Society for Pharmacognosy

### Sheena Francis

- Board Member, Caribbean Diaspora for Science, Technology and Innovation (CADSTI)
- Organiser for Sagicor Visionaries Competition
- Member, American Society of Tropical Medicine and Health
- Member, Caribbean Academy of Sciences
- Member, Jamaica Organic Agriculture Movement
- Jamaican Young Scientist Forum
- Member, Caribbean Coastal Area Management Foundation

**David Picking**

- Chair, FST Cannabis Research Group
- Chair, organising committee, joint conference of Society of Economic Botany (SEB) and International Society of Ethnobiology (ISE) to be hosted by UWI 31st May–4th June 2020
- Member of the campus wide working group (TWG) for Diversity, Equity and Inclusion
- Contributing Member, Steering Committee, National Nutraceutical Industry, Jamaica
- Board of Directors, Perishables Jamaica
- Board member, UJIMA Natural Farmers Market
- Shareholder, South Manchester Herbs and Spices Multi-purpose Cooperative Society
- Member, Society for Economic Botany
- Member, Society for Medicinal Plant and Natural Products Research (GA)
- Collaborator, New York Botanical Garden (NYBG).

**Trevor H. Yee (Retired, honorary member)**

- Treasurer, the International Society for the Development of Natural Products (ISDNP)
- Executive Committee, the Natural History Society of Jamaica (NHSJ).