

## THE NATURAL PRODUCTS INSTITUTE



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Executive Director

### WORK OF THE INSTITUTE

The academic year 2017–18 saw the fruition of multiple efforts to increase grant funding for our research programs. A number of applications were submitted to international and national competitive calls, with six projects gaining success. With NPI staff members being principal or associated investigators, a total of approximately, US\$1.26M in grants were raised during this year. Noteworthy is the grant from the National Commission of Science and Technology (NCST) and Republic of South Africa (RSA), joint agreement on scientific and technological cooperation, for collaborative research on traditional knowledge systems. An agreement was signed between University of Free State, Pretoria, RSA and UWI, signaling the commencement of this project.

During this year, a large amount of laboratory equipment arrived at NPI

(funded through a Seeding Labs grant confirmed the year before, worth US\$0.5M). This enabled the commencement of Aedes mosquito based research projects at the lab.

Members (staff and students) engaged in numerous public presentations and publications throughout the year and were recipients of several awards, which included the Principal's Research Day awards. Details of these are provided in the sections below.

## PAPERS PRESENTED

Invited plenary, oral and poster presentations:

- **Foster, K Asemota H and Delgoda R**, “Traditional use of *Annona muricata* (sour sop) among cancer patients in Jamaica and its anticancer potential” Faculty of Science and Technology Conference, UWI, April 25–27, 2018
- **Delgoda R** (Invited, keynote presentation), “Embarking on impactful research in Jamaica” 10th Anniversary of Seeding Labs, Takeda Pharmaceuticals, March 21, 2018, Boston, MA, USA
- **Delgoda R** “Embarking on impactful research in Jamaica” presented to Executives of Merck pharmaceuticals, March 22, 2018, Cambridge, MA, USA and online presentation to worldwide executives of Takeda Pharmaceuticals, May 9, 2018
- **Morrison I, Watson J, Porter R and Delgoda R**, “The Cytotoxic and Potential Chemo-preventive Value of Extracts and Isolates of the Jamaican *Artocarpus heterophyllus* (Jackfruit)”, FST Conference, UWI, April 25–27, 2018
- **Delgoda R and Matsabisa M**, “Increasing the appreciation of Indigenous Knowledge Systems (IKS) in Jamaica through community engagement and scientific evaluation of identified medicinal plants for their potential anticancer and antihypertensive activities”, Launch of the Jamaica/Republic of South Africa (RSA) Agreement on Scientific and Technological Cooperation, Eden Gardens, Kingston Jamaica, March 14, 2018

- Morrison I and **Delgoda R**, “The Wonders of Medicinal Plants” An Afternoon with a Scientist, Natural History Museum of Jamaica, Kingston, Jamaica, February 21, 2018
- **Picking D**, ”Update on Jamaican TRAMIL activities”, XV workshop of the TRAMIL (Traditional Medicines of the Islands: Program of Applied Research to Popular Medicine in the Caribbean), February 8–11th, Kingston, Jamaica
- **Foster K, Murray J, McKenzie J, Morrison I, Wauchop S, Younger N, Aiken W, Brady-West D and Delgoda R**, “Reliance on medicinal plant therapy among cancer patients in Jamaica and the cytotoxic & Chemopreventive value of select plants”, 10th Biennial African Caribbean Cancer Consortium, Miami, USA. 6–10th October, 2017
- Ricketts S, Turfus S, **McKenzie J, Delgoda R**, “The Effect of whey protein on Cytochrome Enzyme CYP450 3A4”, 26th Annual FMS Conference and Workshop, Mona, Jamaica, November 8–10, 2017
- **Francis S, Saavedra-Rodriguez K, Perera R, Paine M, Black W (IV), Delgoda R.**, “Insecticide resistance in *Aedes aegypti* from St. Andrew, Jamaica”. American Society of Tropical Medicine and Hygiene 66th Annual Meeting. Baltimore, USA, November 5–9, 2017
- **Wauchop S, Gossell-Williams M, Delgoda R**, “Evaluating the effects of extracts of *Petiveria alliacea* L on the activities of cytochrome P450 enzymes: assessing the potential for drug-herb interactions”, 26th Annual FMS Conference and Workshop, Mona, Jamaica, Nov 8–10, 2017 (Student awarded best oral presentation)

## PUBLICATIONS

- Vandebroek, I., **Picking, D.**, Aiken, S., Lewis, P.A., Oberli, A., Mitchell, D., Boom, B. “A review of coralilla (*Antigonon leptopus*): An invasive and popular urban bush medicine in Jamaica”. *Economic Botany*, (2018): p1–17; <https://doi.org/10.1007/w12231-018-941505>
- **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 (2008) 1–19; <https://doi.org/10.3390/molecules23020430>

- McNeil, M. J., Porter, R. B., Rainford, L., Dunbar, O., Francis, S., Laurieri, N., & Delgoda, R. “Chemical composition and biological activities of the essential oil from *Cleome ruidosperma* DC.” *Fitoterapia*, 129, (2018). p191–197.

## INCOME GENERATION

- Delgoda R, Matsabisa M collaborators (co investigators: Picking D, Nwokocha, Francis S), “Increasing the appreciation of Indigenous Knowledge Systems (IKS) in Jamaica through community engagement and scientific evaluation of identified medicinal plants for their potential anticancer and antihypertensive activities”, Jamaica/Republic of South Africa (RSA) Agreement on Scientific and Technological Cooperation , 2018–2020 (J\$9.5M)
- Delgoda R, “Identifying novel cancer treatment and prevention leads from the Jamaican biodiversity”, CARPHA/US NIH, 2018-2020 (US\$50,000)
- Morrison I, Wauchop S and Foster K and Delgoda R, “Investigating anti-cancer and chemopreventive properties of seven Jamaican natural extracts and phytochemicals”, Ministry of Health Research Grant Awards, 2018–2019, (J\$1.5M)
- Morse G and Lindo J, NIH Fogarty International Center (Role Delgoda R: UWI campus mentor) to establish a Virology Research Program that will build research capacity in Jamaica through a mentored post-graduate and post-doctoral training initiative and advance the development of the Jamaica Center for Infectious Diseases Research, a collaboration between UWI, Jamaica MOH and SUNY. (US\$ 1.1M over a 5-year period)
- Francis S, “Capacity building for the development of natural products as therapeutics”, JMMB (Jamaica) Ltd. J\$1M; 2018

- Vandebroek I (principal investigator, New York Botanical Garden) and **Picking D** (collaborator), “Tracing the plant diversity and origins of Jamaican root tonics, a symbol of biocultural heritage”, National Geographic grant (HJ-161-17), US\$25,000

## **PUBLIC SERVICE**

### **Rupika Delgoda**

- Deputy Chair, Natural History Museum of Jamaica, Institute of Jamaica
- Board Member, Jamaica Conservation Partners, Jamaica
- Member, Steering Committee, National Nutraceutical Industry, Jamaica
- Member, Cannabis Research and Development Evaluation and Monitoring Committee, CLA
- Member, African Caribbean Cancer Consortium
- Secretary, International Society for the Development of Natural Products
- Co-Licencee and organizer of TEDxJamaica
- 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, Sagicor Visionaries Competition
- Member, American Society of Tropical Medicine and Health
- Member, Caribbean Academy of Sciences
- Member, Jamaica Organic Agriculture Movement
- Member, Jamaican Young Scientist Forum
- Member, Caribbean Coastal Area Management Foundation

## The Natural Products Institute

- Member, Sterile insecticide technique programme and Insecticide Resistance (IR) , Ministry of Health

### David Picking

- Board member, Perishables Jamaica
- Board member, UJIMA Natural Farmers Market
- Shareholder, South Manchester Herbs and Spices Multi-purpose Cooperative Society
- Chair, FST sub-committee for Diversity & Inclusion, UWI

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

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

## AWARDS

- Francis S and Delgoda R, Research Project with the Greatest Business/Economic/Development Impact, FST, The Principal's Research Award, February 9, 2018
- Delgoda R, Most outstanding Researcher, in FST, The Principal's Research Award, February 9, 2018
- Wauchop S, Gossell-Williams M, Delgoda R, "Evaluating the effects of extracts of *Petiveria alliacea* L on the activities of cytochrome P450 enzymes: assessing the potential for drug-herb interactions", 26th Annual FMS Conference and Workshop, Mona, Jamaica, Nov 8–10, 2017 (Student awarded best oral presentation)

## AGREEMENT WITH OTHER UNIVERSITIES

On Tuesday March 13, 2018 a collaborative agreement was signed between the University of the West Indies (Mona) and University of Freestate (South Africa)