Seminar

Global Health, Biodiversity, and Therapeutics

22 Divinity Ave, Cambridge, MA

Harvard University Herbaria

June 9, 2023

9:00 - 9:15 Opening remarks

Prof. Donald Pfister, former director of the Harvard Herbarium and curator of the Farlow Library and Herbarium

Veronica Vargas, Ph.D. Research Associate, Harvard Faculty of Arts and Sciences

9:15-9:45 Mining a hundred thousand fungal genomes – the LifeMine approach to drug discovery

Martin Stahl, Ph.D. LifeMine (confirmed virtually)

Fungi are a rich source of secondary metabolites, many of which have become important drug classes. LifeMine has built a platform that systematically identifies novel compound-target pairs, enabling a new paradigm for identifying advanced lead molecules. This talk will overview the platform and highlight areas where advanced data science and machine learning methods have become indispensable.

9:45-10:10 The MEDINA Foundation Pioneering Work in Natural-Products Based Drug Discovery

Olga Genilloud (confirmed in person)

Scientific Director MEDINA Foundation, Spain

This Foundation is dedicated to discovering drugs for neglected diseases overlooked by pharmaceutical companies, such as antibiotics and antiparasitic molecules.

10:10 -10:35 Novel approaches to identifying natural products for treating age-related neurodegenerative diseases

Pamela Maher, Research Professor (confirmed in person)

Salk Institute for Biological Studies, University of California

This Institute collaborates with the San Diego Herbarium at the San Diego Natural History Museum.

10:35-11:00 Coffee Break

11:00-11:25 The search for antivirals for emerging and neglected viruses at the Rega Institute
Dirk Jochmans, Ph.D. (confirmed virtually)
The Rega Institute, Leuven University Belgium.
An introduction to the antiviral drug discovery capacity at the Rega Institute. From virus assays, library screening through lead optimization, and in vivo efficacy models. Some examples on dengue, corona, and Hendra/Nipah viruses.

11:25-11:45 Exploiting the plant *Quillaja saponaria* as a source of therapeutic compounds - discovery and industrial production
Gaston Salinas, CEO of Botanical Solutions (confirmed in person)
BSI has developed "ABM-01" based on a plant native to Chile. This product is the active ingredient used in producing therapeutics.

11:45-12:15 Unlocking the therapeutics power of fungi
Paul Stamets. (confirmed virtually)
CEO MycoMedica
Emerging companies offer valuable lessons on translating scientific discoveries into practical applications that benefit society**.**

12:15-13:00 Lunch

13:00- 16:00 Updates on the consortium

13:00-13:20 Using natural extracts in the fight against COVID-19 and its sequelae
Tamara Rubilar, Universidad Nacional de la Patagonia San Juan Bosco, Argentina (confirmed in person)
Updates on the project that searches therapeutics for COVID-19.

13:20-13:40 Biodiversity-Access Platforms as an innovative approach to accelerating bioprospecting in Latin America
Cristian Desmarchelier (confirmed virtually)
Ministry of Sciences and Technology, Argentina
Libraries of extracts with the region's most interesting taxa could reduce bioprospecting limitations with high-throughput screening platforms.

13:40-14:14:00 Latest advances on the INDICASAT Panama project: Natural product development without borders
Dr. Carmenza Spadafora (confirmed virtually)
Center for Cellular and Molecular Biology of Diseases (CBCMe), Panamá
The project establishes a novel partnership between indigenous knowledge holders and scientists with the University College of London collaboration.

14:00-14:20 Exploring Costa Rica's potential for novel drug development
MSc. Gustavo Carazo Berrocal (confirmed in person)
Director of the Industrial Department, Pharmacy Faculty, University of Costa Rica.
Coordinator of Phytochemical Section and Quality Assurance LAFITEC
The Pharmacy Faculty of the University of Costa Rica's research projects and the biodiversity law reforms will be discussed.

14:20-14:40 An update on Brazil´s Nagoya Protocol implementation and R&D of natural products
Daniel Wainstock, Pontifical (confirmed virtually)
Global Health Law Researcher at Pontifical Catholic University of Rio de Janeiro (PUC-Rio)
This talk will present the latest development in implementing the Nagoya protocols and their impact on the R&D of natural products.

14:40-15:00 Bioprospection and study of endemic plants from South America
Mario J. Simirgiotis A., Director of the Pharmacy Institute, University Austral, Chile (confirmed virtually)
The ongoing research of native plants and their importance as biological sources of human health will be discussed.

15:00-15:20 Exploring Patagonia's Native Resources for Medicines
Dr. Pamela Leal-Rojas, and Dr. Adinson Altamirano (confirmed in person)
Department of Natural Resources
Faculty of Agricultural and Environmental Sciences
University of La Frontera, Chile
Interdisciplinary research from Rucamanque Ecological and Cultural Park, a biodiversity hotspot.

15:20-15:40
Natural Products-based Bioprospecting Program at INDICASAT: Tackling the Panamanian biodiversity hotspot for Drug Discovery
Dr. Marcelino Gutiérrez – INDICASAT Center for Biodiversity and Drug Discovery (confirmed virtually)
Panama is in one of the megadiverse zones of the planet. Our program explores different taxa of our biodiversity as a source of novel molecules with biomedical applications.

15:40-16:00 Building molecular barcoding capacities in Guyana
Daniel E. Neafsey (confirmed in person)
Associate Professor of Immunology and Infectious Diseases
Harvard T.H. Chan School of Public Health and the Broad Institute
The talk will describe our molecular barcoding capacity-building project in Guyana, aimed at identifying the ecological elements and mosquito bionomic features conducive to vector-borne disease transmission.

16:00-17:00 Tour of the herbarium