



THE NEW YORK BOTANICAL GARDEN

For Immediate Release
September 6, 2013

As Students Head Back to Campus, New York Botanical Garden Graduates Embark on Promising Careers in Plant Sciences in the U.S. and Abroad

Six Students in the Botanical Garden's Graduate Studies Program Received Ph.D.s In the 2012–2013 Academic Year, the Largest Graduate Class in a Decade

As a new academic year begins, graduate students who recently completed their studies at The New York Botanical Garden's Commodore Matthew Perry Graduate Studies Program have set out on promising careers in science. They are working at universities and research institutions in the United States and abroad to further mankind's knowledge of plants and the critical roles they play in human life and to preserve plant biodiversity for future generations.

The six students who received doctoral degrees during the 2012–2013 academic year—the largest Ph.D. class in a decade—are now pursuing research projects and teaching at such institutions as Stanford University, New York University, Louisiana State University, and Universidad de Antioquia in Medellín, Colombia. One Botanical Garden graduate is applying the expertise he developed in bioinformatics—an interdisciplinary field that includes the sequencing and study of large amounts of DNA data—to trace the evolution of the HIV virus, which causes AIDS. Another student has returned to her native Colombia—a country with one of the highest levels of plant diversity in the world, much of which remains poorly documented—to become a professor of genomics, the study of an organism's complete set of DNA.

While studying at the Garden, the recent graduates made a wide range of discoveries, in settings that varied from a state-of-the-art laboratory in New York City to tropical forests in Central America and Southeast Asia. Two students at the Garden's Institute of Economic Botany—which specializes in the study of how humans use plants for food, medicine, fiber, and much more—documented plants used by traditional cultures in Belize and Thailand to treat such health problems as memory disorders in the elderly and female reproductive ailments. Other graduate research projects identified the genes responsible for major evolutionary changes in certain flowers, discovered genetic variations in a fungal disease that attacks cranberries, and solved a long-standing mystery about the wild relatives of cultivated eggplants.

The Garden's Graduate Studies Program collaborates with six leading universities in the northeastern United States, allowing graduate students in plant sciences who are enrolled at those institutions to conduct their dissertation research at the Garden's world-class science facilities, including the Pfizer Plant Research Laboratory and the William and Lynda Steere Herbarium, which, with 7.3 million dried plant specimens, is the largest herbarium in the Western Hemisphere. Graduate students also gain experience in field work, travelling to a diverse range of destinations to study plants in their native habitats. Garden scientists typically serve as thesis advisors to the students.

–more–

Educating the finest botanists possible has always been a primary mission of The New York Botanical Garden. Responding to habitat destruction in the tropics—where the highest levels of plant biodiversity are found—the Garden has placed a priority on tropical research and the training of the next generation of botanists not only from the United States but also from other countries. The Graduate Studies Program serves a diverse student body; Garden graduates have come from Asia, Africa, Europe, and Latin America. After graduating, most foreign students return to their home countries to hold positions in government agencies, research centers, universities, and botanical gardens, where they have a direct impact on conservation, education, and biodiversity research.

The 2012–2013 Class of the Graduate Studies Program

Here are the students who received doctoral degrees in the 2012–2013 academic year, along with brief descriptions of their research and where they are now working. All were students at The City University of New York, one of the Garden's graduate studies collaborators.

Jillian De Gezelle, Ph.D., researched traditional plant-based remedies used by Maya healers in Belize to treat estrogen-related reproductive health issues, such as menstrual difficulties, fertility, and menopause. She worked in collaboration with the Belize Indigenous Training Institute to document the plants used in traditional remedies, as well as details of how the plants were collected, prepared, and administered. In addition, ten plant species were selected for chemical analysis, and nine of the species were found to either promote or suppress estrogen activity. Dr. De Gezelle is now a teaching assistant professor at North Carolina State University.

Vinson Doyle, Ph.D., studied genetic variation in the fungus that causes fruit rot in cranberries. His results showed that several different species of fungi are responsible for the disease, and he discovered three new disease-causing species that were not previously known to science. Even more surprisingly, Dr. Doyle discovered that the disease-causing species are not closely related to each other, as might have been expected. This finding suggests that cranberry fruit rot might be more than one disease, with different management implications for different populations. Dr. Doyle is now a postdoctoral fellow at Louisiana State University, where he is using the same analytical methods and tools to study the evolution of HIV, the virus that causes AIDS.

Donald McClelland, Ph.D., used DNA sequence data and classical botanical methods such as studying herbarium specimens to research evolutionary relationships among a group of plants in the genus *Solanum*, the largest genus of the potato-tomato family. The plants he studied, which are found mostly on Pacific islands, help scientists understand how plant species spread among islands. Dr. McClelland is now an adjunct assistant professor at Baruch College.

Rachel Meyer, Ph.D., studied diversity in Asian eggplants. By combining traditional herbarium work with DNA and genomic research in the laboratory, she was able to identify the wild relatives of cultivated eggplants. Surprisingly, her data showed evidence of two separate domestication events in eggplants, one in India and one in Southeast Asia. That helps to explain the extreme variation in the shapes and sizes of cultivated eggplants and answers long-standing questions about where eggplants came from. Dr. Meyer is currently a postdoctoral fellow at New York University.

–more–

Lisa Offringa, Ph.D., researched therapeutic plants that traditional healers in northern Thailand use to treat memory disorders in the elderly. Interviews with local doctors have identified plant formulas and individual plants that are used to increase memory and to treat specific symptoms of dementia. Working in collaboration with Thai academic and botanical institutions, Dr. Offringa identified and collected medicinal plants reported as efficacious by traditional healers and tested them for their chemical properties. She is now a postdoctoral fellow at Stanford University.

Natalia Pabón-Mora, Ph.D., focused her doctoral research on the genes that were responsible for major evolutionary changes in flower structure. Working with poppies and columbines, she was able to isolate new genes, determine the functions of these genes, and study their evolution. Her results help to show how the functions of genes can change during the course of evolution, and how this can lead to critical innovations in plant form. Dr. Pabón-Mora is now an assistant professor at Universidad de Antioquia in Medellín, Colombia.

About The Commodore Matthew Perry Graduate Studies Program

The Commodore Matthew Perry Graduate Studies Program at The New York Botanical Garden is internationally renowned for its success in preparing tomorrow's leaders in plant science and conservation, offering comprehensive training and broad-based laboratory and field experience. Since its inception in 1896, more than 275 students have received advanced degrees through the Graduate Studies Program, which is conducted in collaboration with six universities—The City University of New York, Columbia University, Cornell University, Fordham University, New York University, and Yale University. The Director of the Graduate Studies Program is Lawrence Kelly, Ph.D.

###

The New York Botanical Garden is a museum of plants, an educational institution, and a scientific research organization. Founded in 1891, the Botanical Garden is one of the world's preeminent centers for studying plants at all levels, from the whole organism down to its DNA. Garden scientists conduct fundamental research on plants, algae and fungi globally, as well as on the many relationships between plants and people. A National Historic Landmark, the Garden's 250-acre site is one of the greatest botanical gardens in the world and the largest in any city in the United States, distinguished by the beauty of its diverse landscape and extensive collections and gardens, as well as by the scope and excellence of its programs in horticulture, education, and science. Learn more: www.nybg.org

The New York Botanical Garden, 2900 Southern Boulevard, Bronx, New York 10458

The New York Botanical Garden is located on property owned in full by the City of New York, and its operation is made possible in part by public funds provided through the New York City Department of Cultural Affairs. A portion of the Garden's general operating funds is provided by The New York City Council and The New York State Office of Parks, Recreation and Historic Preservation. The Bronx Borough President and Bronx elected representatives in the City Council and State Legislature provide leadership funding.

Media contact for more information or to arrange interviews: Stevenson Swanson at 718.817.8512, sswanson@nybg.org