

The New York Botanical Garden Announces Collaborative Campaign to Barcode all 100,000 Trees of the World

Tree-BOL Project to Jump-start Global Plant DNA Barcoding

The New York Botanical Garden has received funding from the Alfred P. Sloan Foundation to launch "Tree-BOL," a new DNA barcode of life (BOL) initiative to sample all the species of trees of the world. The \$572,000 grant for a 24-month project launches a large-scale, focused campaign to DNA barcode all 100,000 species of trees of the world. A major multi-national effort, Tree-BOL will significantly advance plant DNA barcoding in general. (DNA barcoding uses a short DNA sequence from a standardized position in the genome as the unique molecular identifier for each species.)

The New York Botanical Garden will lead the campaign, with Dr. Kenneth M. Cameron, Director of the Lewis B. and Dorothy Cullman Program for Molecular Systematics Studies, as project leader. Tree-BOL will also involve the participation of several dozen researchers and partner institutions from around the world, divided into regional working groups. Coordination of the parties will be managed by the Botanical Garden through a combination of Web pages, blogs, and workshops, culminating in an international symposium at the Botanical Garden in 2010 on the topic of Plant DNA Barcoding.

James S. Miller, Ph.D., Dean and Vice President for Science at the Botanical Garden, notes, "By initiating a long-term campaign to DNA barcode all tree species globally, The New York Botanical Garden will bring together scientists around the world in a concerted effort to advance the field of plant DNA barcoding, and contribute to the goal of the international scientific community to complete DNA barcodes of at least 500,000 unique species of living organisms in the next few years. Furthermore, the project will provide an invaluable scientific resource for research, conservation, and sustainable management of the trees of the world, a global asset essential to life on earth."

Trees constitute 25 percent of all plants. They were selected as the focus for this project for their economic value as sources of fuel, fiber, food, flowers, and medicine; as well as for their ecological value as carbon sinks, producers of nearly half of the oxygen necessary for life on Earth, influencers of weather patterns through transpiration and gas exchange, and definers of many of the biomes and habitats on land. In addition, certain tree species can be invasive, while many others are critically threatened or endangered (e.g., teak, mahogany, balsa, etc.) Finally, trees have public appeal. Since the dawn of mankind, trees have inspired the imaginations of scientists and artists alike.

The first Tree-BOL workshop for all interested project participants from around the world is planned to take place early in 2008 and will launch the data-gathering phase of the project. Among the anticipated goals for the first phase of research are barcoding all the trees of Europe, half of the trees of North America, and all threatened or endangered trees protected by the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). Phases 2 & 3 of the campaign are expected to target tropical species. Regular workshops, spaced approximately once every six months, are planned to share data, assess progress, and refine goals for the next phase.

Tree-BOL is modeled on similar DNA barcoding projects already underway to document all the fish and birds of the world. However, its scale is quite different; while there are perhaps 10,000 different species of birds and up to 30,000 species of fish in the world, it is estimated that there are more than 100,000 species of trees.

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The New York Botanical Garden is an advocate for the plant kingdom. The Garden pursues its mission through its role as a museum of living plant collections arranged in gardens and landscapes across its National Historic Landmark site; through its comprehensive education programs in horticulture and plant science; and through the wide-ranging research programs of the International Plant Science Center. For more information, please call 718.817.8700 or visit our Web site at www.nybg.org.

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.

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