



THE NEW YORK BOTANICAL GARDEN

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Nature as a Source of Potential New Medicines Will Be Subject of Largest U.S. Gathering of Natural Products Researchers

New York Botanical Garden Scientists Among Featured Speakers at International Congress on Natural Products Research, July 28–August 1, in New York



The urgent need to evaluate nature's repository of chemicals in plants, microbes, and marine organisms for their potential value in health care will be a major theme of a five-day scientific conference in New York that is expected to draw some 1,200 natural products researchers from around the world.

Organized and co-hosted by The New York Botanical Garden, the City University of New York, and other New York-area research institutions, the International Congress on Natural Products Research (ICNPR) will be held from July 28 to August 1 at the Grand Hyatt Hotel in New York City. The theme of the conference is "Global Change, Natural Products and Human Health."

Several scientists from the Botanical Garden will take part in ICNPR events at the Grand Hyatt, and on July 26, the Garden's Midtown Education Center, located on West 44th Street, will host a special presentation about the development of Taxol, the widely used chemotherapy drug first isolated from the bark of the Pacific yew tree.

Focusing on the study of medicines derived from natural sources, the ICNPR will feature sessions devoted to the traditional areas of natural products research—marine, microbial, and plant sources of medicinal chemicals—as well as the latest developments in analytical technologies, genomics, and many other areas of natural products work. Organizers expect it to be the largest U.S. gathering to date of natural products researchers.

Global Environmental Problems Increase Urgency of Natural Products Research

From simple aspirin to sophisticated cancer-fighting drugs such as Taxol, the natural world has served as an important source of medically active compounds. That resource is under increasing strain from such global environmental problems as climate change and habitat destruction, yet only a fraction of the many thousands of plant, microbial, and marine species have been studied to determine if the chemicals they produce could be the basis of new pharmaceuticals to treat or prevent human illness.

This critical situation will be the subject of a July 29 symposium that will provide an overview of the current state of natural products research. Among the speakers will be James S. Miller, Ph.D., the Garden's Dean and Vice President for Science, who will review past efforts to find medically useful chemicals in plants, which proved disappointing, and recent technological developments that could improve the success rate of such efforts.

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In a [paper published last year](#) in the journal *Economic Botany*, Dr. Miller calculated that there are probably at least 500 medically useful chemicals in plant species whose chemical constituents have not yet been evaluated for their potential to cure or prevent disease.

“Whether it’s plants, microbes, or marine organisms, we’ve barely scratched the surface when it comes to screening programs for new pharmaceuticals,” Dr. Miller said. “Why have we stopped looking?”

In a July 30 symposium on botanical supplements, the Garden’s Damon Little, Ph.D., will review the use of DNA barcoding techniques to verify the ingredients in herbal dietary supplements. Black cohosh, for example, is commonly used for menopausal symptoms, but accidental misidentification or deliberate adulteration can result in impure supplements containing other related, but potentially harmful, species.

Despite grinding and drying during the manufacturing process, however, short portions of plant DNA can usually be sequenced and the results compared to a publicly available database of DNA barcode sequences. In a study of 36 samples that were marketed as black cohosh, Dr. Little and colleagues found that 25 percent contained three Asian plant species related to black cohosh. Dr. Little will also talk about his recent barcoding work on garlic and saw palmetto supplements.

On July 31, the Garden’s Michael Balick, Ph.D.—co-organizer of a symposium on research and development based on ethnobotany, the study of how people use plants for food, medicine, fiber, and other necessities of life—will discuss how scientists and clinicians are learning about traditional uses of plants and evaluating their efficacy and potential for use in improving global primary health care.

Dr. Balick, who has spent more than 30 years studying the many ways in which indigenous people use plants in their everyday lives, will describe programs on remote tropical Pacific Islands in which a combination of traditional medicines and conventional Western therapies could result in improved public health and greater self-sufficiency.

From Tree to Patient: The Story of Taxol’s Development Will Be Focus of July 26 Talk at NYBG Midtown Education Center

On July 26, in an associated event prior to the conference, Susan Band Horwitz, Ph.D., who played a critical role in the development of Taxol, will recount the arduous, 20-year process that started with the discovery of a medically active compound in the bark of the Pacific yew (*Taxus brevifolia*) and eventually resulted in a drug that has been used to treat more than one million patients suffering from ovarian cancer, breast cancer and certain types of lung cancer. Dr. Horwitz, the Falkenstein Professor of Cancer Research at the Albert Einstein College of Medicine in the Bronx, will be joined by Mark O’Neil-Johnson, Ph.D., of Sequoia Sciences, Inc., a St. Louis natural products research company, to discuss the complexities of bringing a new drug based on a natural product to the market. They will speak at 7 p.m. at the Garden’s Midtown Education Center, 20 W. 44th Street. (Admission is \$13 for Garden Members, \$15 for Non-Members.)

About the ICNPR

Intended to promote the interchange of the most current research among active investigators working in all aspects of natural products research, the ICNPR is a joint meeting of the American Society of Pharmacognosy and four European research societies: the Society for Medicinal Plant and Natural Product Research, the French-Speaking Society of Pharmacognosy, the Phytochemical Society of Europe, and the Italian Society for Phytochemistry.

Garden scientists have collaborated closely with researchers from other New York institutions, especially Lehman College of the City University of New York, in organizing the conference. Edward Kennelly, Ph.D., a Lehman biology professor, is the chair of the local organizing committee.

For a complete schedule of events and speakers, go to <http://icnpr2012.org>

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Media wishing to cover ICNPR events or the July 26 presentation at the NYBG Midtown Education Center should contact the Garden's Public Relations office at 718.817.8616, pubrel@nybg.org or Professor Edward Kennelly at 718.960.1105, EDWARD.KENNELLY@lehman.cuny.edu

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The New York Botanical Garden is a museum of plants located at Bronx River Parkway (Exit 7W) and Fordham Road. It is easy to reach by Metro-North Railroad or subway. The Garden is open year-round, Tuesday through Sunday and Monday federal holidays, from 10 a.m. to 6 p.m. The best way to enjoy the Garden is with the *All-Garden Pass*, which includes admission to the grounds as well as to seasonal gardens, exhibitions, and attractions such as the Enid A. Haupt Conservatory, Everett Children's Adventure Garden, and Tram Tour. For ticket pricing, please check our Web site. For more information, please call 718.817.8700 or visit 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.

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