

**Presenting the 2008  
International Training Program on Natural Products:  
Botanicals, Nutraceuticals and Medicinal and Aromatic Plants**

“FROM SOURCING AND PRODUCTION TO PROCESSING AND  
PRODUCT DEVELOPMENT, AND FROM QUALITY CONTROL TO  
HEALTH APPLICATIONS”

*August 11th -August 15th, 2008.*

*Sponsored by*



*New Use Agriculture & Natural Plant Products Program, Rutgers  
University, New Jersey, U.S.A.*

*In collaboration with*



**RUTGERS**



THE NEW YORK BOTANICAL GARDEN



**For More Information about the program:**

Visit our website <http://aesop.rutgers.edu/~newuseag/> or contact:

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THE 2008 INTERNATIONAL TRAINING PROGRAM ON NATURAL  
PRODUCTS: BOTANICALS, NUTRACEUTICALS AND MEDICINAL  
AND AROMATIC PLANTS

“FROM SOURCING AND PRODUCTION TO PROCESSING AND  
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**DATES and LOCATIONS**

Hosted by Rutgers University and The New York Botanical Garden this Intensive Short Course on Botanicals, Nutraceuticals, and Medicinal and Aromatic Plants, will be held from August 11th - August 15th, 2008 at Rutgers University, New Brunswick, New Jersey with part of the course held (transportation provided) at The New York Botanical Garden, Bronx, New York City, NY. Rutgers is just one hour south of New York City, one hour east of Philadelphia, and 3.5 hours north of Washington, D.C.

**THE PROGRAM**

The 2008 program focuses on the chemistry and biochemistry of natural products, genetic diversity, plant-based bioprospecting, extraction and processing technologies, botanical standardization and new product development. The program will focus on aroma and flavor chemicals of temperate and tropical zone species. This training includes methods of isolation and analysis and an introduction of chemistry for the non-chemist. Particular emphasis this year will be on developing a Quality Assurance and Quality Control for botanicals from sustainable bush wild-crafting, through the introduction of a new botanical into cultivation, organic production, harvesting and processing, storage, and the actual quality control and product standardization of simple and complex natural plant products. The 2008 program is geared to those interested in agriculture and food, the allied processing and product development industries and in international trade. For those involved in or interested in or involved in agriculture, this short course will include trainings in taxonomy and botanical authentication, plant genetic resources, genetic diversity, organic production technologies, developing real Good Agricultural Practices (GAP) and Good Sourcing Practices (GSP) for the successful commercialization of botanicals and in developing quality control programs for natural products including the development of tracking systems, standard operating protocols, and product specifications sheets for botanicals, medicinal plants, spices, essential oils and other herbal products and dietary supplements. For those interested in new products, new scientific developments and the market of botanicals and dietary supplements, food safety, chemical characterization and bio-activity screening of botanicals will also be featured along with historical and current market trends.

This course will provide an in-depth focus on Natural Products; including case studies on individual Essential oils, Medicinal and Aromatic Plants. The marketing, trade and regulations of dietary supplement and nutraceutical industries will be discussed. Finally, we will also provide a focus on African and Asian botanicals and case studies on specific plants and products from these regions.

The program will include workshops, lectures, hands-on laboratory including herbarium vouchering, the screening of botanicals for antioxidants, total phenols and antimicrobial activity, and in the testing and evaluation of product quality (chemical and physicochemical attributes). Site visits to The New York Botanical Garden (Bronx, NYC. Visit: <http://sciweb.nybg.org/science2/>), Herbalist and Alchemist, a commercial botanical manufacturer (Washington, NJ) and our own Rutgers field breeding and agricultural research experiment station (Pittstown, NJ) are planned.

#### **ABOUT RUTGERS AND NEW BRUNSWICK**

Rutgers University is located in New Brunswick, the heart of central New Jersey. New Brunswick offers an abundant variety of dining, shopping and entertainment opportunities. The city is also just a train ride away from the excitement of New York City and Philadelphia via NJ Transit from the conveniently located train station. In addition to the restaurants, stores and theaters downtown, nearby Routes 1 and 18 provide easy access to shopping centers, movie theaters and many other businesses. For more information about this entire great city has to offer, visit [www.newbrunswick.com](http://www.newbrunswick.com) or call the School of Environmental and Biological Science Office of Continuing Education at 732-932-9271 for a visitor's guide. New Jersey is the epi-center of the food, beverage, fragrance and pharmaceutical industries in the USA.

#### **WHO SHOULD ATTEND?**

This intensive training program will be beneficial to those seeking in-depth knowledge and expertise in natural products in a holistic manner including their historical roles and applications to their modern uses; from the genetics and actual production of the plant, to the processing and extraction of plant products; from the basic chemistry and biochemistry of the plants to their relevance in the commercialization of the final processed botanical product, essential oils, herbal teas, spices, phytomedicinals and dietary supplements. Thus, those plant scientists, pharmaceutical and medical researchers and health care practitioners including:

- Graduate students, Postdoctoral Research Fellows and International Scientists
- Natural product and natural resource industry representatives
- Governmental officers
- Private producers, processors, and marketers
- Conservation and development agency representatives
- Agricultural and food scientists and officers
- Professionals and students in the aromatherapy field
- Aromatherapists and Fragrance Industries

- All involve in quality control and product standardization
- Those in the commercial industry working with Natural Plant Products

## **COST AND REGISTRATION INFORMATION**

The registration fee is \$2,000.00 per person for the course. After July 11th, or on-site and space permitting, the registration will be \$2,500.00 per person.

Group rate: Register five people at the same time from the same organization and the fifth registration is free. This discount is only available if you register all together and request this discount.

You may send in a non-refundable deposit of \$500.00 with your registration form to reserve your place in this course; full payment must be received prior to or upon arrival. Your registration fee includes training manuals and bulletins, transportation for field trips, and all laboratory, greenhouse, field supplies. Your fee also covers a welcome reception, refreshment breaks, and a farewell banquet. Lodging is not included and need to be reserved by you separately and in advance (additional information below). Rutgers University reserves the right to cancel this program. In the event of a cancellation, you will receive a full refund for your registration. A syllabus will be mailed to each registrant. While our staff includes members fluent in several languages including Spanish, French, Hindi, Chinese and Korean, the program will be given only in English with no translation available.

## **How Do I Register?**

It's easy! You can register through by mail or fax or on line

- **By Mail:** Mail your completed registration form, including a certified check, money order (PAYABLE TO RUTGERS, THE STATE UNIVERSITY OF NEW JERSEY) to: Att. Adolfin Koroch. Department of Plant Biology & Pathology, Foran Hall/Cook Campus, 59 Dudley Rd., New Brunswick, NJ 08901, USA.
- **By FAX:** Fax your registration, including wire transfer information, 24 hours a day, to 732-932-9377
- **Online through our website:** Please visit our registration website at <http://aesop.rutgers.edu/~newuseag/> and click on ITP 2008. This will direct you to our registration site.

### ***Refund Policy***

Rutgers University is not responsible for expenses incurred due to cancellation. A cancellation fee will not be applied for cancellations before June 01, 2008, but those needing to cancel after that time will be charged a cancellation fee from June 02- July 1, 2008. No refunds will be provided for cancellation after July 11, 2008. Rutgers University shall not be responsible for any loss, damage, injury, accident, illness, delay or inconvenience to any person, their luggage or other property during their stay at Rutgers or while on route to or returning from Rutgers. Participants are urged to have personal travel and health insurance.

## Lodging

Lodging is not included in your registration fee. To reserve lodging and receive a discounted rate, please indicate that you are with the “ITP Program/Rutgers/Jim Simon” group. **(The deadline for reservation is on July 10, 2008, so please make your reservations early.)**

Ramada Inn & Conference Centers (2.64 miles away, est. time 5 min)

North Brunswick, NJ

Phone: 732-246-3737. Fax 732-448-9670

\$69.00 plus tax per night/Non-smoking

<http://www.ramadanorthbrunswick.com>

University Inn, on the Rutgers campus, New Brunswick, NJ (on campus)

Phone: (732) 932-9144. Fax:(732) 932-6952

Email: [univinn@rci.rutgers.edu](mailto:univinn@rci.rutgers.edu)

Continental Breakfast

\$84.00 per night - DO NOT RESERVE ROOMS ON-LINE! (Rate is higher!)

<http://univinn.rutgers.edu/>

Hilton East Brunswick - East Brunswick, New Jersey, U.S.A. (2.73 miles away, est. time 6 min)

East Brunswick, New Jersey U.S.A. 08816

Hotel Reservations: 1-800-359-5672

\$132.00 per night

<http://east-brunswick-nj-us.hotels-x.net/Hilton-east-brunswick.html>

Hyatt Regency New Brunswick (1.73 miles away, est. time 5 min)

New Brunswick NJ 0890

<http://newbrunswick.hyatt.com/property/index.jhtml>

We will be providing shuttle service for those staying at Ramada Inn & Conference Center and University Inn hotels. If staying at other hotels, you will need to provide your own transportation to/from hotel to the course in Foran Hall. Additional hotel/lodging recommendations can be provided upon requests.

## For our far away guests

For out-of-state or foreign participants, the nearest airport to New Brunswick is the Newark International Airport which is about 45 minutes away in Newark, New Jersey. For those arriving from overseas, many will find arrivals coming into the JFK International Airport and/or the La Guardia International Airport, both in New York City and about 60 minutes away. The Philadelphia International Airport is about a 90-minute drive and appears to be the furthest away from Rutgers. Bus and train service in addition to taxi service is available from the airports that will bring you to New Brunswick. If you require shuttle service from the airports to your hotel,

you will need to make your own arrangements by calling State Shuttle at (973) 729-0030 or (800) 427-3207. For more information about their service, visit their website at [www.stateshuttle.com](http://www.stateshuttle.com). Additional shuttle services and transportation information can be provided upon request. We are happy to provide additional recommendations and guidance upon request to ensure your visit and logistical arrangements are smooth.

### **Confirmation of Registration**

You will receive a confirmation packet defining the date, time, and location for our course. Your confirmation packet will include local maps, directions to the course location and a University parking tag and additional welcome and preparatory information.

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*Topics and Workshops\**

**Medicinal/Aromatic Plants (MAPs):**

- Medicinal plants: History, Use and Tradition
- Identification and botanical authentication of medicinal plants and understanding their medicinal uses
- Good Botanical Practices
- Natural Products Chemistry of alkaloids, polyphenols (eg. flavonoids, lignans) and terpenoids
- Extraction, separation and purification of biologically active natural plant products
- Botanical Standardization and Adulteration
- Food safety, Good Manufacturing Practices (GMP) and HACCP
- Making Quality Matter: Quality Control
- Marketing requirements for national, regional and international trade.
- Plant-based bioprospecting approaches and models
- Searching for genetic diversity in MAPs: germplasm collection and characterization
- Models of New Crop Commercialization
- Good Agricultural Practices (GAP), Good Collection Practices (GCP), workshops and case studies
- Sustainability issues in MAPs production: an organic approach
- New Product development-Discussion of case studies
- Turning Waste Streams into New Products
- Case Studies on Indigenous Plants and Natural Products from North America, Sub-Sahara Africa and Asia
- Technology transfer, outreach and building capacity
- Dietary Supplement and Herb Industry Trends
- Developing Public Private Sector Partnerships

\*Topics are subject to final revision.

The course content will be delivered via interactive lectures, hands-on laboratory sessions, workshops and field trips. The field trips include:

- Tour of the Rutgers MAP greenhouses and agricultural field experiment station at Pittstown to the plant breeding programs and varietal evaluation of a wide range of aromatic and medicinal plants, ethnic produce research plots and pilot-scale field distillation unit for the extraction of essential oils;
- Tour through the manufacturing facilities of the Herbalist & Alchemist- Beth Lambert and David Winston, hosts. A specialized botanical and medicinal plant company; and
- Tour to The New York Botanical Garden.

### **Selected List of Our 2008 ITP Team of Instructors (in alphabetical order):**

**Mr. Steven Foster**, medicinal and aromatic plant specialist, writer, lecturer, and photographer as well as an international consultant to growers, researchers, and others in the medicinal and aromatic industries. One of the nations leading experts and authors on American medicinal plants, Mr. Foster's expertise on botanical identification, traditional uses of herbs and medicinals and models to conserve our medicinal plant heritage while developing sustainable approaches to their commercialization will be featured. Foster is also internationally known for his photography of botanicals, medicinal and native plants.

**Dr. Ramu Govindasamy**, Associate Professor, Department of Agricultural Food Resource Economics, Rutgers University. Dr. Govindasamy's expertise is in agricultural economics and marketing from the development of base-line survey, community participation, crop budgets and economic analysis of new crop enterprises. His work in the USA on ethnic produce, on organic agriculture and niche products compliments his international experience within the ASNAPP team evaluating new MAPs for rural community development in sub-Saharan Africa. Linking product development to the market and using a market-first approach is one of his approaches to commercial development.

**Dr. H. Rodolfo Juliani**, Rutgers University. Director of Quality Assurance and Quality Control for Agribusiness in Sustainable Natural African Plant Product Program (ASNAPP) and Associate Director of NUANPP. Dr. Juliani's expertise is in the areas of germplasm selection, plant physiology, chemistry (GC/MS/FID and UV Vis spectrophotometry), quality of medicinal and aromatic plants, and nutritional crops.

**Dr. Adolfina Koroch**, New Use Agriculture and Natural Plant Products Program, Rutgers. Dr. Koroch's expertise is in plant physiology and the biology of aromatic and medicinal plants. She has published extensively on using tissue culture to better examine the biology of MAPs and as a tool to select and improve germplasm and rapidly increase elite clones of MAPs.

**Dr. James S. Miller**, Dean and VP for Science, Rupert Barneby Curator for Botanical Sciences, The New York Botanical Garden, Bronx, NYC, NY. Dr. Miller's expertise is in botanical taxonomy, the collection and search for new medicinal compounds, bioprospecting and IP issues surrounding the discovery of new bioactive agents. He has worked extensively in sub-Saharan Africa including Madagascar.

**Prof. James E. Simon**, Director of the New Use Agriculture and Natural Plant Products Program, Rutgers. Dr. Simon's areas of expertise include plant genetic diversity, crop improvement, conservation, sustainable environmental and economic development using indigenous plants, phytochemistry, and quality control of botanicals and MAPs.

**Dr. Qing-Li Wu**, Assistant Research Professor and Associate Director of the New Use Agriculture and Natural Plant Products Program, Rutgers. A natural plant products chemist, Wu's expertise is in Traditional Chinese Medicines, natural products chemistry and in botanical standardization and authentication. As co-Director of NUANPP, Wu brings his expertise to the chemical characterizing of natural products using the latest analytical equipment and techniques including LC/UV/MS, MS/MS, NMR, and in the establishment of new analytical protocols and searching for new plant sources of known bioactive compounds.

**Dr. Nathan Swami**, Rutgers University and Xechem International. Dr. Nathan Swami, a microbiologist, has considerable expertise in searching for new antimicrobial agents from plants and fungi. His experience in searching for plants with new bioactive chemical entities from around the world has lead to his development of robust screening methodologies.

(For international scientists, a invitation letter may be needed upon request for getting US Visa)