

# THE FORUM - BOTANICAL EDUCATION AND OUTREACH

The Botany 2002 conference in Madison, Wisconsin included the inaugural education/outreach Forum. Approximately 1,000 plant biologists attended the overall conference, and 300 of these traveled to Madison early to attend the Forum. The Program Committee was delighted with the attendance and with the Forum program. Attendees completed evaluation forms of the Forum program, and they also found it to be very valuable and a refreshing addition to annual scientific meeting. Therefore, the Forum is now an annual event.

*"...Teaching students about plant biology is as critical to the future of the field as is research and must take its proper place as an equally laudatory endeavor for botanists. Equally vital are activities that communicate the excitement of plant biology to students and teachers involved in K-12 education and to the general public..."*

This passage from the *Botany for the Next Millennium* Report (BSA, 1995) emphasizes the important role of education and outreach, at all levels. However, there continues to be a reduction in the number of Botany courses taught at the undergraduate level and many Botany Departments and programs have been eliminated nationwide. Despite this, the global significance of plants continues to grow. It is therefore vital that botanists and their professional societies work to ensure that plants are represented in the undergraduate and graduate curriculum, as well as in science outreach initiatives.

The Forum will begin on Friday evening with early registration and an informal welcoming reception. The main sessions will occur on Saturday, August 13th. Although some informational sessions will be included, the program will primarily include interactive panel and roundtable discussions, as well as breakout groups focusing on a range of topics. Sunday's offerings will include a variety of complimentary hands-on workshops. Two-hour, half-day, and full-day workshops will be organized so that attendees can participate in more than one workshop, and/or participate in field trips, also planned for Sunday. Participating K-12 educators from Texas may earn up to 15 Continuing Professional Education credits for attending the Forum, workshops and field trips.

## Topical Themes of the Forum

- **Emphasizing Botany across the Curriculum**
- **Designing Investigative Laboratories**
- **Engaging Undergraduates in Research**
- **Developing Effective Teaching and Mentoring Skills**
- **Supporting Effective Teaching and Learning**
- **Reaching Out beyond the Ivory Towers**



## Overview of Forum Schedule

**Friday, August 12th ..... 6:00 pm - 9:00 pm .... Registration and Informal Welcoming Reception**

**Saturday, August 13th ..... 8:00 am - 6:00 pm .... Registration**

**8:00 am - 11:00 am .... Concurrent Sessions**

**11:00 am - 12:00 pm .. Keynote Address – Barbara Schulz**

**12:00 pm - 1:00 pm ... Lunch Break**

**1:00 pm - 5:00 pm .... Concurrent Sessions**

**5:00 pm - 7:00 pm..... Reception**

**Sunday, August 14th ..... 8:00 am - 5:00 pm .... Concurrent FREE Workshops and Field trips**

*(register for these separately)*



**Please visit the conference website for more details about the Forum, including a listing of presenters, session titles, abstract and even more.**

**[www.2005.botanyconference.org](http://www.2005.botanyconference.org)**



**BARBARA SCHULZ**  
**The National Academies**  
**Teacher Advisory Council**  
**Center for Education**

Barbara brings a wealth of experience to her work with the Academies. With a Bachelors degree from the University of Illinois, and a Masters degree in Secondary Science Education from the University of Washington, Barbara has a long-standing love for teaching and working with young people. For 35 years, she taught Biology, Advanced Placement Biology, Environmental Science and many other classes to students in the 7th through 12th grades. Her experience spans public and private schools, middle and high schools and outreach programs in the Seattle area. She holds a K-12 lifelong teaching certificate and a Secondary Principal Certification in Washington State. She has served as High School Division Director for the National Science Teachers Association, President of Washington Science Teachers Association and President of the National Association of Biology Teachers.

Barbara has a record of leadership in education. As President of the National Association of Biology Teachers (NABT), she collaborated with Genentech, Inc. to support the professional development program and web site called Access Excellence (AE). As a strong advocate for educational outreach, Barbara networked with many scientific societies and was an invited presenter at many national meetings to talk about making connections between science teachers and scientists. By acknowledging cultural similarities and differences, she assisted others in making significant connections with educational professionals who work with K-12 students. In this capacity she was instrumental in establishing a schoolyard Long Term Ecological Research (LTER) collaboration with the nationally funded LTER program.

A firm believer in research experiences for her students, Barbara established a program called Shoreline Laboratory and Invention Convention where students from the entire school district could engage in science contests, present posters of their research and display inventions.

Not to be left out of the research experiences, Barbara is the recipient of several research fellowship awards and spent time at Fred Hutchinson Cancer Research Center, during several summers, studying lamp-brush chromosome structure in chickens. She then received a fellowship award to join a research team in the McMurdo Dry Valley Mountains of Antarctica to conduct environmental research projects in the most pristine environment on the planet. During this research and subsequent trips to Antarctica, she maintained journal entries and engaged students in research questions via the web.

As a result of her research fellowship awards, Barbara quickly recognized the value of connecting practicing teachers with the scientific research community. With her mentor scientist, Dr. Nancy Hutchison, she developed a professional development program for teachers at Fred Hutchinson Cancer Research Center (FHCRC) in Seattle called Science Education Partnership. This can be viewed on the web at the following site [www.fhcr.org/education](http://www.fhcr.org/education) This program has been operating for more than 10 years and is supported in part by Howard Hughes grants.

As more biology teachers in the Seattle area became connected to the scientific community, it became clear that there was a need for research experiences for young people. When given an opportunity, Barbara started a research lab for kids, BioLab, where young people with similar interest could come together, meet in research teams and conduct their own research projects. BioLab was housed at FHCRC, operated for two years and was temporarily closed due to the downturn in the economy.

She was recently Acting Associate Director of HutchLab; an educational outreach program offered at FHCRC where high school aged young people can come together in the research lab and spend a week of intensive science investigation during the summers and where teachers can bring classes for a one-day workshop during the academic school year.

Barbara has been honored with several awards including the Presidential Award for Excellence in Teaching Science and Mathematics, The Outstanding Biology Teacher award and the Tandy Technology Scholar Award. She was recently a collaborating member of a scientific team researching geological systems and doing the educational outreach for that team.

With a passion for teaching young people, working with teachers and for collaborating with the research community, Barbara brings an intense energy to establishing the Teacher Advisory Council in the Center for Education where she is currently employed.

**Complete Keynote address**  
**information at**  
**[www.2005.botanyconference.org](http://www.2005.botanyconference.org)**



## DR. JOSÉ SARUKHÁN

**Professor  
Instituto de Ecología  
National Autonomous University of Mexico**

**“Mexican biodiversity:  
returning knowledge and  
information to society”**

**Plenary Address  
Sunday, August 14th - 7:30 pm**

José Sarukhán has an undergraduate degree in Biology at the National Autonomous University of Mexico (UNAM), a Master's degree in Agricultural Botany from the Agricultural Graduate College in Mexico, and a Ph.D. in Ecology from the University of Wales, United Kingdom.

He was elected as Director at the Instituto de Biología (UNAM), where he served from 1979 to 1987. In February 1987, he was appointed Vice Chancellor for Science at UNAM, and in December 1988, was elected by the Board of Governors as Rector (President) of this university for the period 1989-1993 and reappointed for the same post for the period 1993-1997. UNAM is higher education institutional complex that produces more than 50% of the research in the country, with 22 teaching campuses and an equal number of research campuses, distributed all over Mexico. It has an undergraduate and graduate enrollment of 167,000 students and 28,000 faculty members. In 1988, at the end of its term as Rector, Sarukhán returned to his post as full-Professor in the Institute of Ecology. He was invited in 2000 by President Fox of Mexico, as Commissioner for Human and Social Development at the Executive Office of the President, a post that he resigned in March 2002.

José Sarukhán was president of the Botanical Society of Mexico (1972-1975), of the Mexican Academy of Sciences (1984-85), and of the Association for Tropical Biology (1986-1987). He has been Coordinator of the Mexican National Committee on the Study and Conservation of Biodiversity (CONABIO) since 1992. CONABIO has assembled the most complete database on the Biodiversity of Mexico established a World Biodiversity Information Network with both Mexican and Foreign nodal institutions, and has provided basic information to implement Biodiversity conservation and management policies in Mexico.

He was President of the Latin American Union of Universities (UDUAL). He was Coordinator of the Red Latino Americana de Botánica, the main South-South scientific cooperation and training organization in America which he helped found in 1987. He has published more than 125 papers and 6 books.

His main areas of interest have been Plant Population Ecology, Systems Ecology, and Biodiversity science, focused specially in Mexico, as well as the role of training and education in Science in general and in Ecology in particular in the development of Third World countries. Currently, he is involved in studying the roles of science in attaining sustainable development at the global and Mexican scales.

He was Chairman of DIVERSITAS (ICSU/UNESCO) an International Program on Biodiversity Science, and a Member of the World Commission on the Ethics of Scientific Knowledge and Technology (COMEST/UNESCO). He chaired the trinational committee on the effects of transgenic maize in Mexican maize land races, a study established by the CEC of NAFTA. He is a foreign member of the U.S. National Academy of Sciences and the Royal Society of London.

## PLENARY SYMPOSIUM

### Botany in the World's Service

Organizer: *Linda Graham*, University of Wisconsin, Madison

## SOCIETAL AND SECTIONAL SYMPOSIA

### Biology of Dryland Plants

Organizers: *Frank W. Ewers*, Michigan State University

*Jorge Lopez-Portillo*, Instituto de Ecología, Veracruz, Mexico

Sponsors: BSA Physiological, Ecological, Developmental & Structural, and Economic Botany Sections

### Comparative Chloroplast Genomics

Organizers: *Robert K. Jansen*, University of Texas, Austin

*Linda A. Raubeson*, Central Washington University, Ellensburg

Sponsors: ASPT and BSA Genetics and Systematics Sections

### Patterns and Mechanisms of Evolution of Island Plants

Organizer: *Klaus Helenurm*, University of South Dakota, Vermillion

Sponsors: BSA Genetics and Systematics Sections, and ASPT

### Dessiccation Tolerance in Bryophytes and Lichens

Organizer: *Brent Mishler*, University of California, Berkeley

Sponsors: ABLS and BSA Bryological and Lichenological Section



*Zilker Gardens*

### Connecting People to Plants—Botanical Messages that Make a Difference

Organizers: *Suzanne Koptur*, Florida International University

*Lisa K. Wagner*, South Carolina Botanical Garden, Clemson University, Clemson

Sponsors: BSA Ecological and Teaching Sections

### The Cross Timbers: Botany, History, and Current Issues

Organizer: *Stanley Rice*, Southeastern Oklahoma State University, Durant

Sponsors: BSA Ecological and Teaching Sections

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## SPECIAL LECTURES

### *Annals of Botany* Special Lecture

"Signals that Regulate Germination and Polarized Growth in Pollen and Fern Spores"

Dr. Stanley Roux, The University of Texas at Austin

Sponsor: *The Annals of Botany*

### Address of the BSA President-Elect

"The Power of Plants: Building Collaborations among Educational Institutions, Botanical Gardens, and Communities"

Dr. Edward Schneider, Santa Barbara Botanic Garden, Santa Barbara, California

### Pelton Award Lecture

"A generation forgotten and Goethe remembered: Modularity and the evolution of flowering plants"

Dr. William E. Friedman, University of Colorado, Boulder



**DR. STANLEY ROUX**  
**Professor**  
**The University of Texas**  
**at Austin**

**"Signals that Regulate  
Germination and Polarized  
Growth in Pollen and  
Fern Spores"**

Dr. Stan Roux received his Bachelor of Science degree summa cum laude from Spring Hill College in Mobile, AL in 1966, his M.S. in Biology from Loyola University, New Orleans in 1968, and his Ph. D. in Biology from Yale University in 1971. After two years as a postdoctoral researcher in the Department of Biophysics and Biochemistry at Yale, he spent 5 years as an Assistant Professor at the University of Pittsburgh. In 1978 he moved to his current academic home at The University of Texas at Austin, where he was Chair of the Department of Botany (1986-90) and of the Division of Biological Sciences (1997-99), and where he is currently Professor in the School of Biological Sciences, Section of Molecular Cell & Developmental Biology, and faculty Ombudsperson for the University.

He has published over 100 primary research articles and scholarly reviews on the topic of the molecular mechanisms by which plants convert light and gravity signals into changes in growth and development. After winning Departmental, College, and University teaching awards, he was selected in 2000 as a member of the Academy of Distinguished Teachers at the University of Texas. In 2002 he received the Piper Professor Award from the Minnie Stevens Piper Foundation, a state-wide award given for excellence in College and University teaching.

Besides his research and significant involvement in teaching, he has served on the editorial board of *Plant Physiology* (1985-92), on the Executive Committee of the American Society of Plant Physiologists (1992-97), and as president of the American Society for Gravitational and Space Biology (1995). He is currently Editor-in-Chief of the Newsletter of the American Society for Gravitational and Space Biology and of the new journal *Gravitational and Space Biology*.

Special Lecture  
Sponsored by:

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