Report to Carol Baskin, President of Botanical Society of America on the BSA-sponsored, educational outreach activities at NABT, CELS and NSTA

Submitted by Rob Reinsvold,
Chair of Teaching Section and Member of Education Committee

In partial response to the society’s call to action in *Botany for the Next Millennium* to “promote effective botanical education of K-12”, the Education Committee and the Teaching Section sponsored an educational booth at the national conference of NSTA (National Science Teachers Association), sponsored a workshop for teachers at NABT (National Association of Biology Teachers) and joined other plant biology societies in a symposium on botanical literacy organized by CELS (Coalition for Education in the Life Sciences). All these activities had a significant impact and placed BSA in the forefront of the efforts to promote greater awareness of the fundamental importance of plants to society and scientific advancement.

CELS Workshop “Toward Literacy in Plant Biology”
July 2, 1998 Madison, WI

The Coalition for Education in the Life Sciences (CELS) organized a one-day workshop that brought together representatives of eleven different professional organizations interested in improving public awareness and literacy of plants and plant biology. The two goals of the workshop were 1) to broaden the discussion of what should be taught about plants and plant biology in a general life science curriculum and 2) to encourage the improvement in teaching and instructional materials using plants. The organizations represented included Botanical Society of America, American Society of Plant Physiologist, American Phytopathological Society, American Society of America, Coalition for Education in the Life Sciences, Association of College and University Biology Educators, Society for Developmental Biology, BioQUEST, American Institute of Biological Sciences, Council for Agricultural Science and Technology and Crop Science Society of America.

John Markwell of ASPP presented ASPP’s Twelve Principles of Plant Biology to initiate the discussion. These principles are now available on their website and have been connected to national and state content standards. Representing BSA, Rob Reinsvold and Ethel Stanley shared the perspectives of BSA on formal and informal education in botany. Copies of *Botany for the Next Millennium* were distributed to all participants. The other societies expressed their willingness to collaborate with BSA, ASPP, and CELS to advance botanical education at all levels (K-college).

NABT Workshop “Leave it to the Plants”
presented at annual meeting NABT, Nov 4-7, 1998, Reno, NV.

To promote the educational outreach goals of BSA, Rob Reinsvold and Ethel Stanley conducted a workshop for secondary and community college teachers at the national convention of the National Association of Biology Teachers (NABT). This conference is one of the largest that brings together biology teachers, especially at the K-12 levels. The workshop presented several innovative approaches that presented plants as ideal organisms for teaching unifying concepts of biology. These activities
explored concepts in ecology, development, biochemistry, and adaptation by considering the leaves on a tree as a population.

The workshop had a room capacity of 50 although at least 30-40 people additional people stood around the edges. These participants express the general need for more plant-related workshops and lessons. Teachers want more than the standard review of prepared slides. They also do not want lessons that introduce more new terms than most foreign language courses. They appreciated BSA for taking a proactive role in botanical education.

NSTA Booth, 
annual meeting of NSTA, Mar 24-28, 1999, Boston, MA.

For the second consecutive year, BSA had a visible presence at the National Science Teachers Association. Last year we shared booth space with American Society of Plant Physiologists. This year, BSA had there own booth in the exhibitor’s hall. Our booth was adjacent to booths sponsored by ASPP, American Phytopathological Society (APS), Wisconsin Fast Plants, and C-Fern. The combined row of booths provided a coordinated effort to promote the use of plants to teach biological principles. We organized all the booths so attendees could flow from one booth to the next.

The total attendance at this convention was 21,154. This included teachers and administrators from Kindergarten through college, representatives from science museums, commercial exhibitors, funding agencies, federal research institutes, and other professional societies. All attendees had access to the booth and BSA received great exposure along with the other plant-related booths. Based on the number of learning activities and BSA bookmarks distributed the BSA display actively engaged at least 1500 teachers. The BSA investment of $3500 (for booth rental, materials, and accomodations of presenters) translates to approximately $2.30 per “engaged teacher”. Although the total cost appeared high at first glance, the potential impact was impressive.

To attract teachers to our booth we had several low-cost, hands-on activity at the booth we called “Badge Botany”. The participants started their own pocket gardens that we attached directly to their name badge. We used these individual “gardens” to illustrate a wide variety of student activities that could be incorporated into a curriculum to illustrate important biological concepts and scientific investigation. Each pocket garden had the BSA logo and website for future reference. By the end of the conference, the small onion sets had sprouted roots and shoots. Throughout the entire conference center, participants were seen with these pocket gardens hanging from their badges. This attracted more conference attendees to our booth and the other plant-related booths. Soon the our row of booths was referred to as “The Plant Place”.

Once we had their attention, we informed the teachers about other botanical resources available for their teaching needs. In addition, we conducted a survey of these teachers to identify the perceived obstacles to using plants more in the classroom and their needs. They expressed an overwhelming need for more workshops and plant-related lessons. Teachers in the K-12 levels often come to the NSTA and NABT conventions to get ideas and lesson plans and BSA can help fill this need.
The BSA booth was the standard 9’ by 10’. This was just adequate to provide work space for the making the “Badge Botany” and to provide display space for handouts on other activitites or resources. We distributed 500 BSA posters, 500 BSA “Careers in Botany”, 250 Botany in the Next Millennium, 1500 BSA bookmarks, and 1500 other handouts on other plant lessons such as “Flying seed competition”, “Organismal olympics”, “Making a low-cost plant press”, and lists of recent publications. The BSA banner and table skirt clearly displayed the BSA logo. The booth was staffed by Rob Reinsvold, Ethel Stanley, and J Shipman of the Teaching Section and Education Committee of BSA. The BSA booth and the booths of APS, ASPP, Wisconsin Fast Plants, and C-Ferns were busy that entire time.

Recommendations for next year:

1. BSA should continue to budget funds for educational outreach. Our impact is worth the investment. The K-12 educators greatly appreciate BSA’s efforts and want more.
2. I think BSA should continue to provide an exhibit at NSTA in coordination with other plant-related societies. For the money invested, this is the most effective way to reach the greatest number of motivated teachers at one time. It lets K-12 teachers know BSA really does value education as stated in Botany in the Next Millennium. The representatives from ASPP and APS also recognized the significance of reaching the teachers and have recommended to their societies to sponsor booths again next year. We are in the process of encouraging additional plant-related societies to join us and increase the success of a row of plant-related booths called “The Plant Place.”
3. Next year’s booth should profile the digitized slide collection since we have invested so much time and effort into the transfer from slides to CD.
4. The next national convention of NSTA in Orlando, FL on April 6-9, 2000. Deadline for booth reservation is
5. Teachers have requested more workshops on specific lessons using plants. These workshops allow more time to explain and illustrate botanical lessons. NABT and NSTA conventions provide opportunities for such workshops, but regional meetings or summer programs should also be considered. NABT has accepted our proposal (Ethel Stanley and Rob Reinsvold as presenters) for a workshop at next year’s meeting.
6. To increase the impact, we need more BSA members involved. To staff the booth at NSTA, 3-4 people could be kept busy the entire time. To allow for opportunities for the booth staffers to make other connections at the convention and have breaks, at least 6 people are needed.
7. The Education Committee should compile a set of tested learning activities for various levels. These should be presented in both hard copy for distribution and available on the website.
8. BSA should continue to endorse the efforts of all those promoting the use of plants to learn biology.