As president, one of my roles is to keep you informed of the many and diverse activities that your Society is undertaking. I have spoken before about the very important and successful role that we play in public affairs—efforts that are carried out by the director of public affairs, Brian Hyles; by our very active Public Affairs Committee; and by the many individuals who have volunteered to testify and speak in various public meetings or congressional forums on issues important to plant science. Similarly, other strong efforts are under way to promote education in the plant sciences and to advance the cause of women and minorities within ASPP and within the broader arenas of science. And it goes without saying that we should all be very proud of our successful annual meetings and our very fine journals, Plant Physiology and THE PLANT CELL.

However, there is one effort in progress of which many of you may not be aware—a very ambitious project to develop, produce, and market a premier, top-quality textbook on plant biochemistry and molecular biology. Titled Biochemistry and Molecular Biology of Plants, and ably edited by Bob Buchanan, Wilhelm Gruissem, and Russell Jones, at the University of California at Berkeley, the book includes superb contributions by more than 50 experts in the various subdisciplines of plant biochemistry and molecular biology.

It is fair to say that the Society had no previous experience with such a huge publishing endeavor, and we have learned along the way just how complex such an undertaking can be. Our hats go off to Nancy Winchester, ASPP’s director of publications, who has steadfastly and expertly guided this project over many difficult and complicated hurdles. And now, at long last, we are almost there! The textbook is due off press this summer in time for its debut at the annual meeting in San Diego July 15–19! We believe the book will be an invaluable resource as both a reference work and a text, and we will have plenty of information at the exhibit for faculty interested in adopting the book for the classroom. For those of you interested in purchasing individual copies, we are planning a one-time special meeting price of $79.95 for the softcover version and $99.95 for the hardcover edition. After the meeting, the softcover version will sell for $89.95 to ASPP members and to students ($99.95 for nonmembers), and the hardcover format will sell for $119.95 to ASPP members ($149.95 to nonmembers and institutions).

Biochemistry and Molecular Biology of Plants will be the most comprehensive resource available for upper-level undergraduates and graduate students. Its 1,300 pages will cover essentially all of the major subdisciplines within the fields of plant biochemistry and molecular biology. I have seen page proofs for some of the chapters, and they are spectacular! The illustrations—more than 1,100 original pieces of art rendered by J/B Woolsey Associates, one of the leading medical illustrators in the nation—are wonderfully detailed. This is a book that I believe every one of you will want to have for your personal library. In addition, I urge all of you who teach plant biochemistry/molecular biology to upper-division undergraduates and graduate students to strongly consider its adoption for your class. ASPP will be marketing this book aggressively worldwide, but we consider you, our members, to be our primary audience.

I urge you to watch your mail for news about this exciting new book; you will not be disappointed! 

Debby Delmer
University of California, Davis
dpdelmer@ucdavis.edu
Future ASPP Annual Meetings

2000
Saturday, July 15, through
Wednesday, July 19
San Diego, California

2001
Saturday, July 21, through
Wednesday, July 25
Providence, Rhode Island

2002
Saturday, August 3, through
Wednesday, August 7
Denver, Colorado
Planned Giving to the ASPP Education Foundation

Planned giving is a term for making a substantial gift to a charitable organization. To encourage the private funding of charitable and educational organizations, the U.S. Congress provides tax incentives for giving. By planning specifically with his or her attorney or tax adviser, a donor can make a gift to the ASPP Education Foundation and may receive favorable tax consideration.

The consideration of estate, financial, and tax planning may enable a donor to make a charitable contribution to the ASPP Education Foundation while maximizing personal financial advantages.

Planned giving can be directed in different ways. One is to make an outright gift, such as stock, tangible personal property, or real estate. In this case, the ASPP Education Foundation has immediate access to the asset. With a bequest, the donor retains the use of the asset during his or her lifetime, and the foundation has the use of it afterward. A life income gift is an asset that is donated to the foundation, but the donor continues to receive income from the asset for life.

“In the coming decades, it is expected that there will be a multitrillion-dollar inter-generational transfer of wealth,” states the Chronicle of Philanthropy, November 18, 1999, page 15. Much of this wealth is expected to go to charitable organizations. The gifts of ASPP members make it possible for the Education Foundation to continue its activities to increase the public understanding of plant science and plant biotechnology. Planned giving to the foundation can benefit both the donor and ASPP. Donors need to consult with their attorney or tax adviser to determine the contribution that would offer the greatest tax advantage.

Plant Biology 2000 will be held side by side with the annual meeting of the Phycological Society of America in San Diego this July!

PLANT BIOLOGY 2000

Five major symposia
Comparative Genomics in Plants (organized by Steven Tanksley)
Leaf Development (organized by Sarah Hake)
Evolution of Photoreception (organized by J. Clark Lagarias)
Redox Regulation (organized by Stephen P. Mayfield)
Plants Through the Millennia (organized by Debby Delmer)

Seventeen minisymposia
Plant Interaction with Pathogens
Guard Cell Signal Transduction
Abiotic Stress I
Abiotic Stress II
Vegetative Plant Development
Societal Issues in GMOs
Algal Physiology
Hormone Receptors and Signaling Targeting
Membrane Transporters I
Membrane Transporters II
Genomics: Structure & Function
Genomics: Analysis
Enzymology
Seed Biology
Bioenergetics in Photosynthesis
Cell Walls

2000 ANNUAL MEETING OF THE PHYCOLOGICAL SOCIETY OF AMERICA

The 54th annual meeting of the Phycological Society of America will consist of selected daily plenary lectures, organized symposia, and contributed oral/poster papers within Applied Phycology, Cytology & Ultrastructure, Ecology, Physiology & Biochemistry, and Systematics & Evolution sessions. Tentative topics/speakers of the plenary lectures and symposia follow. (Exact schedule subject to change.)

Plenary Lectures
The Point Loma Kelp Forest: Perspectives of Half a Century of Research (P. Dayton & M. Tegner)
Trends, Algae and People (E. Gantt)
Exchanges of Energy, Information and Materials in Symbioses (J. Raven)

Symposia
The Algal Cell Surface (organized by M. Gretz)
The Dynamics and Evolution of Light-Harvesting Complexes: In Honor of Elizabeth Gantt (organized by A. Grossman)
The Ecology and Evolution of Big Brown Algae (organized by M. S. Foster & D. C. Reed)
Evolution, Biogeography and Systematics of Marine Algae: In Honor of Dr. Max H. Hommersand on the Occasion of His Retirement
The broad-based support of Society members has contributed greatly to the success of the ASPP Education Foundation. Financial donations from members have been used to help increase the public's understanding of plant science and biotechnology. "The contributions of ASPP members are a vital force in the foundation program and help make its plant science projects possible," stated Bob Goldberg, chair of the foundation's board of directors. The following is a list of ASPP Education Foundation donors for 1999 and the first quarter of 2000.

Donations can be mailed to the ASPP Education Foundation or made through the ASPP Web site at http://aspp.org, Education Foundation section.

Donation of $100,000
Richard M. and Deana T. Klein

Donations of $1,000
Bob B. Buchanan
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Donations of $500-$999
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Donations up to $99
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Staff Changes at Headquarters Office

Over the past few months, ASPP has welcomed four new staff members to the fold: Carolyn Freed, Stephanie Liu, Burton Nicodemus, and Beth Staehle. We’ve also said farewell to Perry Masciana and Crispin Taylor.

Carolyn Freed is receptionist and administrative assistant to the membership and marketing manager. She provides customer service. She came to the Society with 15 years in the consumer finance business (moving up through the ranks to become assistant manager), seven years as sales secretary for Bunton Instrument Company, three years as administrative assistant for the Sheriff’s Department in Knoxville, and seven years as office coordinator for Family Services Agency, Inc., in Gaithersburg, Maryland.

Stephanie Liu joined us in November 1999 as accounts receivable specialist. She posts payments to member records, handles billing, and assists the accountant on a variety of projects. Born in Taiwan, Stephanie came to the United States in 1981 and earned a bachelor’s degree from The American University in Washington, DC. She returned to Taiwan, where she worked for several years as an executive assistant. Since returning to the United States, she has held positions with United Airlines and a variety of nonprofit organizations.

Burton Nicodemus is network administrator/webmaster. He is in charge of administering the servers, desktops, printers, applications, network, Web site, and phone system... as he says, “basically anything to do with technology.” He has worked at many levels of the computer industry, from sales, to help desk, to major projects and rollouts. Past employers include Egghead Software, Coventry Health Care, and Cal Tech Services. Burton replaces Perry Masciana.

Beth D. Staehle (STAY-lee) joined ASPP in April as managing editor of THE PLANT CELL. She was formerly director of publications at the Entomological Society of America. Prior to that she was manager of the book publishing program at the American Fisheries Society (AFS), where, over the years, she held a variety of positions, including editor of the AFS magazine and deputy managing editor of the society’s journals. Beth adds, “In each organization I have worked for, it is the dedication of the members to their profession and to their society that inspires me day in and day out. I look forward to working with ASPP members and to meeting many people at Plant Biology 2000.”

We said goodbye in April to Perry Masciana, information specialist. For four years, Perry was in charge of computer networks and served as webmaster. He leaves the daily grind for Maryland’s beautiful Eastern Shore to start his own Web hosting and design firm, NationSites LLC. Perry enjoyed working on Web projects for Society members and invites his former colleagues to stay in touch. Check out the NationSites Web site at http://nationsites.com/.

Finally, in March we said so long to Crispin Taylor. Crispin joined ASPP in 1996 as the news and reviews editor of THE PLANT CELL. In July 1998, he was promoted to managing editor of the journal. He leaves us for AAAS and Science Next Wave (http://nextwave.sciencemag.org), a weekly online publication devoted to scientific training and career development. Next Wave provides global news, profiles of emerging career opportunities, and advice from experts and role models drawn from the international scientific community. As managing editor of Next Wave, Crispin is responsible for the site’s overall look and feel as well as for coordinating—with other editors and writers—content development. He would be happy to hear from his friends at ASPP and can be reached at ctaylor@aaas.org.
Support for Name Change

The following letter is from 11 Stephen Hales Award Winners:

Research in experimental plant biology has undergone explosive growth in recent years, and our Society now represents scientists from a wide range of subdisciplines that relate in one way or another to the biology of plants. Because many of these scientists do not consider themselves to be physiologists, we support the proposal to change the name of ASPP to the American Society of Plant Biology. We are aware of the arguments in favor of keeping this name that we all love, but we find the arguments in favor of the new name compelling. The new name is but one step in creating a new image for our Society that will make it more attractive to a wide range of plant biologists. We are in favor of creating the “Big Tent” that includes molecular genetics, genomics, biotechnology, structural biology, cell biology, and other disciplines that have emerged during the past 30 years.

Andrew A. Benson, 1972 Awardee
Olle E. Bjorkman, 1986 Awardee
Lawrence Bogorad, 1982 Awardee
Winslow R. Briggs, 1994 Awardee
Robert H. Burris, 1968 Awardee
Maarten J. Chrispeels, 1996 Awardee
Hans Kende, 1998 Awardee
Oliver E. Nelson, 1988 Awardee
Bernie O Phinney, 1984 Awardee
Clarence A. “Bud” Ryan, 1992 Awardee
Paul K. Stumpf, 1974 Awardee

As ASPP members who have served the Society in different capacities, we lend our support to the proposal that the name of the American Society of Plant Physiologists be changed to the American Society of Plant Biology. The name change will make our Society a more inclusive group by attracting plant biologists who currently do not view themselves as plant physiologists. This name change would also allow the Society to grow and expand its horizons in publishing and in the organizing of meetings and conventions, as well as in providing membership services. Membership in ASPP has remained relatively static over the past decade, but the number of new researchers attracted to plant biology has increased dramatically. The new American Society of Plant Biology could be an attractive organization for our colleagues in the areas of plant cell biology, genetics, development, and molecular biology who are not now ASPP members while still providing a home for those of us who consider ourselves plant physiologists. ASPP has served us well, but just as plant biology is changing, so our Society must change to attract the new members needed to keep it healthy and dynamic. A change in the Society’s name will provide a strong and positive signal for the new millennium.


Important Dates in 2000

Plant Biology 2000 — Housing registration cutoff: June 15
Plant Biology 2000 — Pre-registration cutoff: July 1
Plant Biology 2000 — San Diego, California: July 15–19
Western Section meeting — Lake Tahoe, California: November 3–5

Bob Buchanan Recognized by Emory & Henry College

The Distinguished Achievement Award from Emory & Henry College was presented March 23, 2000, to UC–Berkeley Professor Bob B. Buchanan, past president of ASPP. This recognition by Buchanan’s undergraduate alma mater was part of the university’s Charter Day celebrations marking the 161st anniversary of the granting of the college’s charter by the Commonwealth of Virginia.

The award was presented to Buchanan “In proud and grateful recognition for his pioneering work and discoveries in the field of science, which are changing the way we think and improving the way we live.”

Announcing the Amersham Pharmacia Biotech & Science Prize for Young Scientists

Here’s a great opportunity for scientists who completed their Ph.D. in 1999 to receive recognition for their research in the field of molecular biology. The 2000 grand prize winner will receive $25,000, and runners-up will receive $5,000 each.

Go to www.apbscienceprize.org for entry details.
A major new congressional committee report on the benefits and safety of plant genomics and agricultural biotechnology was released by the House Science Subcommittee on Basic Research April 13. Several ASPP members contributed testimony and other assistance in the development of the report. Jim Cook, Mike Thomashow, Ken Keegstra, and John Ryals are ASPP members who were witnesses before the committee.

Press materials from the House Science Subcommittee released at a news conference April 13 included comments on the report from several ASPP members, including the following:

“This report, better than any other I have seen, presents the science behind our government’s decision to proceed with the applications of this biotechnology to the benefit of food, agriculture, and the environment while also giving clear and fair attention to the safety concerns expressed by the critics of agricultural biotechnology.”
—R. James Cook, Washington State University (Jim Cook is a member of the ASPP Committee on Public Affairs.)

“I find the House Science Committee Report on Plant Genomics and Agricultural Biotechnology to be one of the most intelligent and comprehensive analyses of these complicated issues that I have ever read. It provides a very clear description of the goals and benefits of genomics research, as well as a very sound risk-benefit analysis relating to the development and use of agricultural biotechnology. One hopes it will be widely read by all those interested in obtaining a serious analysis of these complex topics.” —Deborah P. Delmer, University of California, Davis (Debby Delmer is president of ASPP)

“This welcome assessment of the major issues in the biotechnology debate is an important step in helping all parties understand the science behind the headlines. Plant scientists and agronomists are poised to make major progress in reducing pesticide usage, erosion, and other conflicts between agriculture and environmental concerns. This report examines the most often-stated concerns about the technology and debunks many of the myths. The report describes how those of us working on genetically modified plants hope to reduce hunger and disease around the world through more focused crop improvements than have been possible in the past.”
—Thomas O. Sharkey, University of Wisconsin, Madison (Tom Sharkey is a member of the ASPP Committee on Public Affairs.)

“This looks like a thorough, thoughtful analysis that considers the opportunities, as well as the criticisms, afforded agriculture by the new genetic enhancement technologies. It’s encouraging to read that the report’s recommendation is based on careful testing and evaluation of GMO products and not the technology itself. Certainly to date, genetically enhanced corn, soybeans, and cotton have proven to be safe and valuable products for farmers and consumers. Considering the opportunities afforded by this technology, and the vital role it can play to enhance nutrition, health, and the environment, it is vital that we not shelve the technology because of a small group of vocal individuals that don’t support its application. There is too much at stake.”
—Brian Larkins, University of Arizona, Tucson (Brian Larkins is ASPP past president and a member of the ASPP Committee on Public Affairs.)

“I strongly agree with the conclusions of the report: Agriculture biotechnology truly has come of age and is beginning to have major positive impacts on the economics of farming and food industries. There is no doubt that consumers are going to be the ultimate beneficiaries of the great advances that are coming from modern plant biology research, including genomics.”
—Charles Arntzen, president and CEO, Boyce Thompson Institute for Plant Research (Charles Arntzen is past board member of the ASPP Education Foundation.)

Also quoted were Ann Vidaver, Henry Miller, and J. Ian Gray.

The House Science Subcommittee noted that the report, Seeds of Opportunity, concludes that there is no significant difference between plant varieties created using agricultural biotechnology and similar plants created using traditional crossbreeding. It recommends that regulations at the U.S. Department of Agriculture and proposed regulations at the Environmental Protection Agency targeting biotechnology products be changed to focus on the characteristics of a plant, not the process used to develop it.

This report, from Congressman Nick Smith (R-MI), chair of the House Science Subcommittee on Basic Research, is the culmination of a series of hearings held on agricultural biotechnology issues by the Basic Research Subcommittee last year.

“Agricultural biotechnology holds tremendous potential to provide consumers safe and nutritious foods, feed a growing world population, protect the environment, aid farmers, and lower costs to consumers,” Smith said. “Implementing the recommendations in this report would ensure that this potential is fulfilled.”

House Speaker Dennis Hastert (R-IL) expressed his support for Smith’s report, stating, “The Seeds of Opportunity report is an important step for American agriculture. This report concludes that there is no distinction between plants bred using biotechnology and those produced through traditional crossbreeding. Biotechnology can play a significant role in the future of agriculture. It can help farmers improve their yields and decrease their reliance on chemical agents. I’d like to thank Chairman Nick Smith for his leadership on this issue. Because of his efforts, Americans can look forward to a cleaner environment and better, safer produce.”

The report addresses many of the concerns surrounding agricultural biotechnology, including the effect on the Monarch butterfly, allergens, toxins, antibiotic resistance, and outcrossing. It concludes that plants and foods produced using agricultural biotechnology pose risks no greater than those for plants and foods developed using traditional methods.

“I think the real value of this report is that it has let the voice of the scientific community come through unfiltered to address these contentious issues,” said Smith. “In the case of agricultural biotechnology, the scientific community is as united as I have ever seen it on any major issue.”

The following are some highlights of the report’s findings:
• The promise of agricultural biotechnology is immense. Advances in this technology will result in crops with a wide range of desirable traits that will directly benefit farmers, consumers, and the environment and increase global food production and quality.
• There is no evidence that transferring genes from unrelated organisms to plants poses unique risks. The risks associated with plant varieties developed using agricultural biotechnology are the same as those for similar varieties developed using classical breeding methods. Because the new methods are more precise and allow for better characterization of the changes being made, plant developers and food producers are in a better position to assess safety than when using classical breeding methods.

• The threat to the Monarch butterfly and other non-target species posed by pest-resistant crop varieties developed with agricultural biotechnology has been vastly overstated and is probably insignificant.

• There is no scientific justification for labeling foods on the basis of the method by which they are produced. Labeling agricultural biotechnology products would confuse, not inform, consumers and send a misleading message on safety.

• Federal regulations should focus on the characteristics of the plant, its intended use, and the environment into which it will be introduced, rather than on the method used to produce it. Regulations that capture selectively the products of agricultural biotechnology do not reflect the scientific consensus on risk, are overly burdensome, and stifle scientific research.

Chronicle Reports on ASPP Members’ Public Education Efforts on Modified Foods

In an article titled “Scientists Leave the Lab to Defend Bioengineered Food,” the Chronicle of Higher Education reported April 14 on some of the public outreach efforts of plant scientists, particularly ASPP members, to explain issues related to modified foods.

The article described various activities, including the street demonstration organized in Oakland in December 1999 by ASPP member Willi Gruissem of the University of California at Berkeley. Scientists handed out leaflets and debated “with anyone who would listen,” the article said. The demonstration was timed to coincide with a public hearing on modified foods held by the Food and Drug Administration.

The scientists wanted to offer an alternative view to that of environmental groups and others who have staged numerous protests in the United States against genetically modified foods during the past year, the article explained. Recently, some of the protests have grown violent, with groups like the Earth Liberation Front destroying scientists’ offices and genetically engineered crops at the University of California, the University of Minnesota, and Michigan State University, the Chronicle said.

Plant scientists in academe, the vast majority of whom support the use of techniques that transfer new genes into crop plants, have begun to respond to the public’s outcry, the Chronicle reported. They are trying to educate people about the science behind the techniques by engaging in debates, framing petitions, holding press conferences, writing newspaper articles, and addressing government agencies. And they are urging the public to keep an open mind about the technology and to heed the growing mass of data that pinpoint the risks and benefits.

The Chronicle article added that the researchers see genetic engineering as a powerful tool to increase food production and protect the environment, and they worry that it could be lost if the public does not support it. Scientists also worry that a loss of confidence in genetic engineering could cut off government and corporate support, forcing scientists to abandon their research. And they fear the long-term impact of scientific issues being decided on the basis of incorrect information.

The article quoted James N. Siedow, professor of biology at Duke University (former ASPP president and current chair of the ASPP Committee on Public Affairs), as saying, “What should drive the issue is the science. Where there are legitimate scientific concerns, those clearly need to be addressed. The flip side of the coin is, we ought not to be basically throwing out the notion of commercialization of genetically modified organisms based on fear and half-truths and outright falsehoods.”

While some people say they worry that such crops will wreak havoc on the food supply and the environment, plant scientists say those fears are overblown, the article noted. “The first thing that gets lost in these discussions is the science,” Siedow said.

Take the issue of food safety. No experiments that stand up to scientific scrutiny have results indicating health risks from eating genetically modified foods, the article said. Millions of Americans have eaten the foods for several years now, and no problems have been reported. Yet fears of unsafe food still seem to be foremost in the minds of the public. When Peggy C. Lemaux, a cooperative-extension specialist for the University of California at Berkeley (and a former ASPP Committee on Public Affairs), recently gave a talk, an audience member began crying because she found out that the soy formula she fed her baby was made from genetically modified plants, the article noted.

Lemaux and other researchers say that there are no solid data to suggest that bioengineered foods make people sick, the article explained. A widely publicized experiment, in which rats were fed genetically engineered potatoes, has been written off by most scientists as being inconclusive. Although the rats suffered damage to their guts and immune systems, scientists believe the problem lies in the potatoes themselves, which produce natural toxins at varying levels, and in the fact that the rats in the experiment were undernourished. No ill effects were reported in similar experiments in which rodents were fed bioengineered tomatoes.

A food-safety concern that scientists take more seriously—but think they can resolve—is the possibility that genetically modified foods can cause allergies, the article said. If the gene added to a crop produces an allergenic protein, a previously harmless food could elicit allergic reactions, according to the report.

But on the basis of the molecular identity of the protein, scientists often can predict whether it will be an allergen, even before engineering a plant to produce it, according to Bob B. Buchanan, a professor of plant and microbial biology at the University of California at Berkeley and a former ASPP president.

“If you take one gene from soybean and put it into corn, it’s not going to make corn any less safe,” Channapatna S. Prakash, the director of the Center for Plant Biotechnology Research at Tuskegee University and chair of the ASPP Committee on Minority Affairs, told the Chronicle. He pointed out that triticale, a widely planted hybrid of wheat and rye, was produced by mating the two crops, adding tens of thousands of genes from rye to wheat.

The article said that scientists dismiss concerns that agricultural biotechnology will reduce the planet’s biodiversity. It added that traditional agriculture is just as likely as newer techniques to replace wild ecosystems.
The article said that an environmental concern that transgenes might move into closely related plants growing nearby is an important one, according to Norman C. Ellstrand, a professor of genetics at the University of California at Riverside. Because many transgenes help crops survive—by protecting them from insects, for instance—the bioengineered plants could conceivably mate with related plants, including weeds, and make them harder. The major crops grown in the United States do not have weedy relatives here, Ellstrand pointed out, but it could be a problem for growers elsewhere.

"We may be able to anticipate most of the problems with transgenic crops," Ellstrand said. "We're not talking killer tomatoes. We're talking reasonable risks that can be anticipated."

Research on risks would be a wise use of resources by those who believe in biotechnology the most, according to Margaret Mellon, the director of the Union of Concerned Scientists' agriculture and biotechnology program. "But they really don't act as if they see that it's in their interest to understand the risks of the technology."

The article noted that Bt crops are already reducing the use of traditional pesticides long suspected of being hazardous. According to the National Center for Food and Agricultural Policy—a nonprofit organization in Washington financed by the federal government, charities like the Rockefeller Foundation, and several agricultural-chemical companies—the use of Bt cotton reduced insecticide use by 2 million pounds in 1998, or 12 percent of the total used nationwide on cotton.

However, most of the benefits that might come from genetically modified crops are hypothetical, because these products are still in the pipeline, the article maintained. "The best stuff is yet to come," says ASPP member Ray A. Bressan, a professor of horticulture at Purdue University's main campus who studies the genes that allow some plants to tolerate drought. His research, like that of many other academic scientists, is many years from producing a usable crop, but if successful, it could help subsistence farmers dramatically. So could research to improve the nutritional value of foods, which is also making headway, the article noted. In January, European scientists announced that they had created rice containing the substance humans convert to vitamin A, which is deficient in the diets of millions of people.

Prakash has developed a sweet potato with high protein levels. He hopes to bring his vegetables to the farmers of Vietnam by working with the International Service for the Acquisition of Agri-Biotech Applications, a nonprofit group that helps interested countries develop appropriate biotechnology methods.

Genetic engineering is also being used to create foods with entirely new properties. Some genetically modified foods, far from causing allergies, might actually make them less problematic, the article said. Buchanan has discovered an enzyme from plants that can disarm the allergens that make it impossible for some people to consume wheat or milk.

"If we treat the food with our system, the vomit response is greatly reduced," he said. The process is easy with milk, since the enzyme dissolves in it, but much harder with wheat. So, Buchanan's research team is working to engineer the cereal to produce the enzyme. Buchanan hopes a similar technique will work for peanut allergies, which can be fatal, the article said.

Other bioengineered foods might someday replace medicines. Society member Charles J. Arntzen, president of the Boyce Thompson Institute for Plant Research, a private, nonprofit organization in Ithaca, New York, has already engineered potatoes to deliver vaccines against diarrheal diseases or against hepatitis B, but only if people eat the potatoes raw, the article said. Arntzen is now working on making banana and tomato vaccines.

Edible vaccines would eliminate the need for injections and the cost of purifying and refrigerating traditional vaccines. What is more, the vaccine-containing plants could be grown in developing countries. Once scientists develop such plants, critics argue, someone will need to deal with the logistics of transporting them and making sure that infants get the proper doses.

The Chronicle noted that the ASPP Public Affairs Committee has worked during the past year to involve its members in the public debate over genetically engineered food.

Prakash has drawn up a petition in support of genetic engineering as a "powerful and safe means for the modification of organisms" that can enhance the "quality of life by improving agriculture, health care, and the environment." Four days after he had posted it on the World Wide Web at www.agbioworld.org, 600 scientists had signed it. Now, three months later, more than 1,600 have signed.

"There's no question that activity is increasing," said Lemaux. "Scientists can't afford to keep a low profile anymore." Lemaux has worked to galvanize her colleagues to become activists. Posted on her Web site (plantbio.berkeley.edu/~outreach) are text and slides for a generic talk about biotechnology for other scientists to use.

"It's not to 'support the technology' as much as it is to support the gathering and dissemination of the scientific basis for the technology and its risks and benefits," Lemaux told the Chronicle.
On April 13 the Chronicle of Higher Education conducted a live online discussion concerning modified foods with James N. Siedow, a professor at Duke University and former ASPP president and current chair of the ASPP Committee on Public Affairs. The Chronicle also ran an article on scientists' public education efforts on modified foods in its April 14 issue. (See related story on page 9 of this issue.)

Following are three of the questions posed to Siedow during the online discussion and his answers.

**Question from Cheryl Wray, library employee, Hastings College:** I read in the newspaper that the pollen of a certain crop, I think corn, was killing butterflies, and now I worry that various genetic alterations in plants will adversely affect other animal life over time, not just butterflies, but even species less obvious like nematodes and the like. It seems to me that scientific studies on genetic alterations may not have been intense or broad enough in the rush to get the seeds to farmers. How do you regard the possible dangers of use of genetically altered plants on the rest of the animal kingdom? Do you actually feel there has been enough study?

**James Siedow:** Again, let me reiterate that five to seven years of testing goes into the introduction of new genetically modified crops. That testing, which needs to be passed on by the FDA [Food and Drug Administration], includes looking at the effects of introducing the GMO [genetically modified organism] on other organisms, including animals. The killing of Monarch butterflies with Bt pollen was a laboratory experiment. Previous field testing had already established that the corn pollen would not get more than a few feet beyond the edge of any cornfield, which would not make it very accessible to Monarch larvae. In many parts of the country, the overlap between larvae and corn pollen is minimal or nonexistent.

In 1995, the FDA concluded on the basis of the tests that had been done that the Bt pollen was likely to have little, if any, negative effect on the Monarch butterfly population. Recent research on the butterfly issue referred to in the question has supported this conclusion. In fact, anecdotal evidence suggests that the insect population in Bt cornfields is greater than the population in non-Bt cornfields. The reason this might be true is that when a farmer sprays an insecticide on a cornfield, it will kill every insect that is in the field. The net result is that the use of Bt corn has the potential for increasing, not decreasing, insect diversity.

**Question from Gerry Deitzer, associate professor, University of Maryland:** By attempting to speak with a unified voice on this issue, do we not run the risk of appearing to be dogmatic and of belonging to a special-interest group that uncritically supports the biotechnology industry? Do we not run the risk of losing our credibility as scientists as a consequence?

**James Siedow:** Absolutely. Neither I nor any other independent scientist I know is advocating that scientists speak with one voice on this issue. We should speak as scientists and address the scientific issues, whether they be pro or con. Only then can the legitimate scientific concerns associated with GMOs be adequately discussed and experimentally addressed.

**Question from Todd Runestad, editor, Nutrition Science News:** Much has been made of the so-called "terminator technology," which renders seeds sterile after the first growing season. In particular, it forces farmers to buy seeds from seed corporations every year instead of saving and sowing their own seeds, and cross-pollination of GM terminator crops could render other plants sterile. But could this technology be used as a containment mechanism so that these genetically modified crops could not cross-pollinate?

**James Siedow:** Terminator technology is a technology that renders seeds sterile after the first growing season so they can't be used to make subsequent generations of crops. The answer to the question is yes, it could be used to get around the cross-pollination issue. In developed countries, farmers by-and-large now buy new certified seeds from the seed growers every year. Terminator technology would not have much of an effect on the practice of farming in much of the developed world because of this. In the developing world, this issue is a legitimate one. This is what has led Monsanto to discontinue developing terminator technology. But terminator technology is an interesting case in that it represents a straightforward solution to GMOs outcrossing with wild species, because it would prevent that. So the terminator technology, if used in developed countries, could eliminate a major objection to the introduction of GMO crops without really changing agriculture as it is currently practiced in those countries. In developing countries, terminator technology clearly has potential drawbacks for agriculture as it is now practiced in those countries.

These and other questions and answers can be found on the Web at chronicle.com/colloquy/transcripts/2000/04/20000413siedow.htm.
Senator Bond Credits Prakash on Research, Outreach

A SPP member C. S. Prakash's (Tuskegee University) efforts to educate the public about biotechnology have received special recognition by Senator Christopher Bond (R-MO). On March 1, Senator Bond and Brian Klippenstein, from Bond's office, met with Prakash and ASPP staff.

Prakash expressed his appreciation for Senator Bond's strong leadership in Congress in defending plant biotechnology and in moving plant science into the genomic era. Prakash noted that plant research could help to alleviate world hunger. Senator Bond, plant research champion in Congress, gained enactment of the plant genome initiative sponsored by NSF, which has provided $150 million in new funds for plant genome research during the past three years. The senator has skillfully led efforts in the Senate to protect continued research using plant biotechnology.

Senator Bond credited Prakash for his research and for his work in pointing out the needs of people in the developing world for technology. He also commended ASPP for its contributions to this public debate.

In a gracious recognition of Prakash's visit, Senator Bond distributed a letter to all of his colleagues later that day discussing Prakash's comments and his published column entitled "Foes of Biotechnology Ignore Global Hunger." Following is Bond's letter to all U.S. senators:

Sincerely,
Christopher S. Bond

Science should prevail over politics on food safety and biotechnology
March 1, 2000
Dear Colleague:

Today, I had the pleasure of meeting with Dr. Channapatna S. Prakash, Director for Plant Biotechnology Research at Tuskegee University. Dr. Prakash has been active in developing and promoting biotechnology applications that assist those in the developing world and has just returned from India and South Africa.

Enclosed is an editorial ["Foes of Biotechnology Ignore Global Hunger"] published recently in the Atlanta Journal-Constitution, where Dr. Prakash described the miserable conditions and otherwise bleak prospects for those in the developing world if new technology does not emerge. In my meeting, Dr. Prakash spoke of the notion advanced by some that the developing world's farmers currently practice "sustainable agriculture." He noted, "The only thing it is sustaining is poverty and disease."

The development of biotechnology is not recreational. Through biotechnology, scientists like Dr. Prakash are attempting to solve the real-world problems of sickness, hunger, and resource depletion. The hysteria and unworkable propositions advanced by those who can afford to take their next meal for granted have little currency among those who are needy.

Sincerely,
Christopher S. Bond

C. S. Prakash (left) met with Senator Christopher Bond (R-MO) to express his appreciation of Senator Bond's leading support of plant research.

American Society of Cell Biology
40th ANNUAL MEETING
December 9–13, 2000
Moscone Convention Center
San Francisco

KEYNOTE SYMPOSIUM
The ASCB: 40 Years Leading the Revolution in Cell Biology
Saturday, December 9, 6:00 p.m.
J. Michael Bishop, Michael S. Brown, Joseph L. Goldstein

The Mechanism of Protein Synthesis
Alan Hinnebusch, Harry F. Noller, Jr., Nahum Sonenberg

Novel Dimensions of Cell Motility
Marie-France Carlier, Thomas M. Roberis, H. Lee Sweeney

Chromosome Dynamics
Douglas E. Kosherland, Victoria Lundblad, Daphne Preuss

Determination of Left-Right Asymmetry
Daniel Constam, Nobutaka Hirokawa, Elizabeth Robertson

Pathogen Recognition and Host Defense
Barbara Baker, Pamela Bjorkman, Ruslan M. Medzhitov

Cellular Organization at the Synapse
Mary Kennedy, Joshua R. Sanes, Morgan Sheng

Biological Clocks
Steve Kay, Ann Roushie, Joseph S. Takahashi

Chemical Approaches to Biological Problems
Daniel E. Kahne, Jeff Kelly, Laura Klessing

Plus six minisymposia each afternoon, award lectures, and workshops and sessions on careers, education, grantsmanship, public policy and issues of special interest to minorities and women

For more information, contact us at www.ascb.org/ascb
301-530-7153 or ascbinfo@ascb.org
ASPP Testimony on NSF Cites Wide-Ranging Benefits of Plant Research

In testimony presented April 12 to the House of Representatives Appropriations Subcommittee on VA [Veterans Affairs], HUD [Housing and Urban Development] and Independent Agencies (including the NSF), ASPP Public Affairs Chair Jim Siedow of Duke University noted the many benefits to society of basic plant research.

Siedow noted that basic plant research supported by NSF has led to many benefits for all Americans. "In all major sectors of the economy, including food, energy, clothing, housing, recreation, health, and medicine, we see that plants and plant products represent a primary component," Siedow said. "The support of this Committee for genomic and non-genomic plant research supported by NSF helps plant scientists make the basic research breakthroughs needed to address the enormous nutrition, health, and energy needs of this nation and the world," Siedow said.

On the issue of genetic modification of foods, Siedow said there are activists who take positions that appear to be anti-biotechnology or anti-globalist or anti-corporation.

"This collection of interests has raised a number of scientifically unsubstantiated claims against products of food biotechnology. However, we are not aware of peer-reviewed articles or confirmed instances of injury that support there being a problem with genetically modified foods. Instead, we hear conjecture and the use of terms like 'Frankenfoods' that are clearly designed to scare the layman," Siedow said.

"On April 5, the National Research Council of the National Academy of Sciences issued a report titled Genetically Modified Pest Protected Plants. The committee that wrote the report emphasized it was not aware of any evidence suggesting foods on the market today are unsafe to eat as a result of genetic modification. And it said that no strict distinction exists between the health and environmental risks posed by plants genetically engineered through modern molecular techniques and those modified by conventional breeding practices."

"NSF Director Rita Colwell responded to a question [from Congresswoman Marcy Kaptur (D-OH)] at this Committee's hearing held here on April 4 on the question of genetically modified foods. As Dr. Colwell explained, genetic modification of foods has gone on for many years using traditional breeding. Biotechnology simply gives us a more 'precise' and effective method of genetically modifying foods to produce more desirable traits," Siedow commented.

Subcommittee Chair James Walsh (R-NY) responded to Siedow's testimony, saying that as a former Peace Corps volunteer who distributed varieties of dwarf wheat in Asia, "I'm with you on this." Walsh also serves on the Appropriations Subcommittee on Agriculture.

Congressman David Price (D-NC), who has served with Siedow on the Duke faculty, commended Siedow for his work on a national basis (related to plant research and the issue of modified foods). Siedow and ASPP staff met briefly with Congressman Price after the testimony.

The Subcommittee on VA, HUD and Independent Agencies writes the bill that sets federal spending levels for veterans, housing, urban development and programs of several independent agencies, including research and education sponsored by NSF.

New Lecture Series, Fellowship, and Library Collection Memorialize Daniel I. Arnon

Nobel Laureate Paul Boyer, professor emeritus of biochemistry and a member of the Molecular Biology Institute at the University of California at Los Angeles delivered the first Daniel I. Arnon Lecture on March 6, 2000, at the University of California at Berkeley. Boyer gave the lecture, titled "A Research Journey with ATP Synthase," to a packed audience that included 16 of Arnon's relatives. Boyer received the Nobel Prize in Chemistry in 1997 for elucidating how adenosine triphosphate (ATP), the universal energy currency, is made in living cells.

"I knew Dan Arnon for 53 years," Boyer said in his opening remarks. "He had a remarkable career and impact." Boyer then went on to describe, in a lively and at times humorous presentation, the exhilarating experience of investigating ATP synthase, "a most unusual enzyme."

Arnon received the National Medal of Science for "fundamental research into the mechanisms of green plant utilization of light to produce chemical energy and oxygen and for contributions to our understanding of plant nutrition." His many other honors included election to the National Academy of Sciences, the American Academy of Arts and Sciences, and the Royal Swedish Academy of Sciences. He was also the recipient of the ASPP Stephen Hales Prize. He was actively engaged in research until his death in 1994 at age 84.

The inaugural Arnon lecture is one of three ways the Department of Plant and Microbial Biology at the University of California at Berkeley is honoring Arnon's memory. It also has established the Daniel I. Arnon Graduate Fellowship and expects to make the first award in fall 2001.

Bob B. Buchanan
University of California at Berkeley
view@nature.berkeley.edu
The ASPP Committee on Public Affairs met March 11–13 to review and develop recommendations on public affairs issues and visit about 25 offices in Congress and the Executive Branch.

Members of the Committee on Public Affairs are James Siedow of Duke University (chair), Jim Cook of Washington State University, Dawn Luthe of Mississippi State University, Peggy Lemaux of the University of California at Berkeley, Tony Cavalieri of Pioneer Hi-Bred International, Rob Leonard of the University of Arizona, Roger Innes of Indiana University, Tom Sharkey of the University of Wisconsin, and Brian Larkins of the University of Arizona (ex officio member and ASPP past president).

All committee members participated with the exception of Brian Larkins, who noted that the University of Arizona already had a participant in Rob Leonard. Larkins and ASPP President-Elect Dan Cosgrove of Penn State University agreed that this would be a good first Public Affairs meeting in which Cosgrove could participate. (That made it a rather busy week for Dan, who had participated in the ASPP Program Committee meeting the day before.)

After working all day Sunday, March 12, on the business part of the agenda, committee members conducted a number of successful constituent visits on Monday, March 13. Topics discussed related to support for plant research sponsored by NSF, the Department of Agriculture, and the Department of Energy. Committee members also called for science-based assessments of the risks and benefits of plant research using biotechnology.

Topics discussed were determined by the committee on which the member of Congress serves. For example, agricultural research was discussed in congressional offices in which the member of Congress serves on the Agriculture Committee or Appropriations Subcommittee on Agriculture. Basic research sponsored by NSF was the topic of discussion in offices in which the member of Congress serves on the Senate Commerce or House Science Committee or on the Appropriations Subcommittee on VA [Veterans Affairs], HUD [Housing and Urban Development] and Independent Agencies.

DOE-sponsored plant research was discussed in congressional offices in which the member of Congress serves on the Appropriations Subcommittee on Energy and Water Development.

Among the offices in which modified foods were discussed were those of Senator Christopher Bond (R-MO) and Barbara Boxer (D-CA). Senator Boxer’s staff met with Lemaux and ASPP Public Affairs staff. Boxer had earlier introduced a bill calling for mandatory labeling of modified foods. Lemaux discussed the substantial benefits of plant research using biotechnology relative to risks. Cavalieri met with Brian Klippenstein of Senator Bond’s office. Senator Bond, one of the leading supporters of plant research in the history of Congress, has led a strong defense of plant biotechnology in the Senate. (See related story on Bond’s and Klippenstein’s meeting with ASPP member C. S. Prakash on page 12.)

In addition to the Capitol Hill visits, committee members also met with Dr. Cliff Gabriel, deputy to the associate director for science of the White House Office of Science and Technology Policy (OSTP). Gabriel related a communication he had with President Clinton in which the president expressed his enthusiasm for the research using biotechnology that led to more nutritious rice. This golden rice, with higher levels of beta-carotene (the precursor of vitamin A) and usable iron, could combat millions of cases of human blindness and anemia suffered in developing nations where rice is the staple food crop.

Mike Holland of the White House Office of Management and Budget (OMB) met with committee members on research supported by the DOE Division of Biosciences. Committee members discussed leading examples of basic plant research related to energy supported by the division and expressed their appreciation for Holland’s and OMB’s support of basic plant research.

The timing of the congressional visits was shortly before appropriations committees were taking letters from members of Congress on their priorities for the FY2001 budget. For example, Congressman Ed Pastor (D-AZ) sent a letter that voiced his support for basic plant research to the Appropriations Subcommittee on Energy and Water Development on which he serves. Rob Leonard had requested the support of the congressman for DOE-sponsored basic plant research in the meeting he and ASPP Public Affairs staff had with Marian Leonardo of Pastor’s office. Pastor has been a strong and consistent supporter of DOE-sponsored basic plant research.

Efforts by the Committee on Public Affairs, the Executive Committee, ASPP Campus Contacts, their colleagues, and the Public Affairs office have resulted in new federal funds for plant research and have rescued plant research funds that otherwise would have been lost for a total of more than $200 million over the past several years through FY2000. 

Ed Pastor

David Price

Richard Lugar
GM Is the Best Option We Have

ASPP member Anthony Trewavas, Institute of Cell and Molecular Biology, University of Edinburgh, published the following letter in the April 10th edition of the Edinburgh Evening News. It is used with permission.

Hardly any readers of this article will not know the furor about GM [genetically manipulated] food. A decade ago, as a university plant biologist, I thought that genetic manipulation would be publicly funded and used for the benefit of mankind. Indeed I share in the general distrust of GM commercialization. But this is the world we live in: if you don't like it, change the economics, don't demean the knowledge.

Two recent reports of publicly funded, university GM research now indicate its true potential. U.S. scientists in collaboration with Japanese workers have genetically improved rice to increase seed yield of each plant by 35 percent. Why is this important?

One of the most certain facts about the human population is that it is increasing. By 2025 there will be 2.3 billion extra souls on Mother Earth—500 times the current population of Scotland—and they will have to be fed. Our current number of some 5 billion has already placed dangerous burdens on the ecosystems of Spaceship Earth and threatens our biodiversity, on which we are all interdependent. Global warming may indeed be global warming. So ploughing up wilderness to feed these extra people is no option.

Clever plant breeding in the early 1960s produced rice and wheat plants with well over double their previous yield; such progress enabled a parallel doubling of mankind without massive starvation. But this option is now exhausted. Ignoring the problem, leaving billions to starve in misery—the worst of all terrors according to Amnesty International—is not an option either. Every man's death diminishes me because I am part of mankind—a philosophy I know many Scots share. So where one grain grew before, we now again have to ensure that two will grow in the future. Currently GM is our best option to achieve this difficult task. The first report is very encouraging. The future now looks a little brighter.

The second report deals with a problem that kills one million young children in the Third World every year and leaves many millions permanently blind. For a variety of reasons, babies can be prematurely weaned off breast milk. It's not a problem in the West; a variety of other foods and milk are available. But in the backwoods of the Far East, the usual option is rice gruel. Rice, however, contains no vitamin A, and babies fed rice gruel rapidly become deficient. Either their eye development is permanently damaged (we all need vitamin A for sight), or they succumb to childhood diseases that any Western baby shrugs off in a week. Scientists at a Swiss university in a tour de force have genetically improved rice to make vitamin A. This golden rice has been given to the International Rice Institute in the Philippines for distribution to help ameliorate this serious problem and ensure a better life for parents and children. Yet again, knowledge wins out.

But how do these examples compare with the skepticism shown by the U.K. public over GM food? Doesn't GM food harm human health? What about those apocalyptic visions of damage to the environment propounded, for example, by those on trial in Norwich for trampling crops? If these views had any real substance I would share them, but they are totally contrary to all experience.

As for the hypothetical harm to human health, nearly 300 million U.S. citizens, 1.2 billion Chinese, and many other millions in Argentina, Australia, Brazil, India, and indeed Scotland have eaten GM soya, tomatoes, sweet peppers, and corn for periods of three to five years without so much as a headache, a cough, or any other medical condition. Nor is any ever likely. The testing of GM food is exemplary in its detail and takes at least four years. Sir John Krebs, head of our new Food Standards Agency, concluded that GM food is as safe as its non-GM counterpart. That is my conclusion as well. Each GM food will be considered by regulatory authorities on its own merit. Raising anxiety about hypothetical dangers is not uncommon in political campaigns which have other agendas. The human imagination is a marvelous thing, but its wilder meanderings have eventually to square with reality.

As for GM environmental effects, the same countries provide us with details of reduced use of herbicides and pesticides of 15 percent to 100 percent, of increased crop yields, lesser insect damage, a return of non-target insects to fields, and reductions in fungal toxins in food. That is good news for farmers, but of only marginal benefit to consumers in terms of price, which probably accounts for much U.K. skepticism. Nonetheless, farmers do need help. If technology helps them, as it has so often done, the spin-off eventually will be the security of our food supply. The flurry over the Monarch butterfly has been capped by record numbers on migration last year. Over 20 laboratories have now shown the original Monarch fears were groundless. Within five years, vaccines against the killer E. coli, hepatitis B, cholera, and other diseases will all come in GM food. They are in human trials already. These vaccines will be very stable, be easily distributed worldwide, and need no refrigeration or injection—merely consumption. The great programme to eliminate worldwide disease, as we have with smallpox, will be well under way. Apocalypse now? Hardly.

For some GM opponents, their campaign seems designed to prevent human improvement. Those on trial in Norwich are self-appointed guardians of their own opinions, whatever their claims; they are not elected representatives. Nature's wisdom, they tell us, is to replace people's cleverness. But human cleverness has brought us long life, freedom from want, windows on the world, and cures for disease. It has taken mankind to the moon. These opponents belittle humanity. I find their visions of the future bleak. They threaten human development and castigate experimentation. When problems develop, we must rise to the challenge, not try to reverse history or set the world in aspic. Things that do not change are dead; that is the bleak future offered if nature's wisdom supersedes people's cleverness.

The main goal, we are told by GM opponents, is to go organic. Was this a thought-through policy or made up on the hoof? It is quite clear to me it was the latter. Experts tell us that cancers that occur under the age of 65 are avoidable. Thirty percent of these cancers are thought to result from poor diet. Over 200 detailed investigations have shown that a diet high in fruits and vegetables cuts all cancer rates by at least half. Increasing the price of these essential foods will reduce consumption, particularly in the poorest families for which the food bill is a much higher proportion of the weekly wage. The consequences? Higher avoidable cancer rates, premature death, and soaring health bills. Organic food, whatever its environmental merits, is labor intensive, does not use preservatives, and consequently needs quick delivery before fungal damage makes it unpalatable and probably dangerous. All of this ensures a much higher price. Any attempt to go organic could lead to the consequences of cancer and death I have listed above. The only justification for buying organic food is that farmers apply less pesticide in its production. But that is precisely what the current GM crops offer us at conventional, or even lower, food prices. GM harm? No. Medical benefit? Yes. 

May/June 2000, Vol. 27, No. 3
Participants are drawn to the ASPP, Wisconsin Fast Plants, and C-Fern exhibits at the National Science Teachers Association annual convention held in Orlando April 6–9, 2000. ASPP Education Committee member Paul Williams discusses plant science with one of the many teachers who visited the ASPP booth. Thousands of teachers have taken plant science education information back to their classrooms from ASPP education booths.

SAN DIEGO!
Plant Biology 2000
San Diego, California — July 15–19, 2000

Don’t miss the many special and unique events planned for ASPP’s first annual meeting in the new millennium! All of the scientific programs, exhibits, most social and networking events, and lodging for attendees will be held at the Town & Country Resort and Convention Center, located in the Mission Valley area of San Diego.
A

SPP members derive many benefits from the Society; after all, people usually join an organization because of what it can do for them. My own history with ASPP started with just that approach. In 1987, a new poster session was added to the roster on the topic of education. By offering a poster session on teaching, ASPP provided a new benefit to its members and helped to strengthen the idea that teaching is important. This idea was one that we could take home to our colleges and universities. My academic position at the time was 100% teaching, which meant that no funds were available for me to attend meetings focused on research. A poster session on teaching enabled my chair to provide funds for me to attend an ASPP national meeting to present an education poster.

The meeting was held in St. Louis, and I remember it well. I think I read every poster (research and teaching—there were fewer posters then), and I came away invigorated and full of new ideas for my teaching laboratory. But new ideas were not the only benefit. The members of ASPP who were strongly interested in education wanted to highlight this new poster session. My poster was given the number 1 and was located at the entrance to the exhibit hall. As a result, I met just about everyone who came into the hall, including Ellen Weaver, who had been instrumental in starting the section on education. She was delighted to hear that it was the new poster session on teaching that had brought me to the meeting. I also met Paul Williams (he had an education poster there, too) and many other plant physiologists who loved teaching, whether or not they had an active research laboratory. Over the years these friendships have provided me with support, encouragement, and lots of new approaches to teaching. Poster presentations on teaching kept me coming to ASPP meetings for years.

Eventually, I was attracted to the more hands-on possibilities provided by the Education Booth, which the Education Committee organizes for each annual meeting. I tried to do just about every experiment from my plant physiology course that was appropriate for the venue. I can remember a few horrible moments (for instance, an over-stimulated mimosa plant that refused to provide an action potential for an anxious waiting crowd), but on the whole, participation in the activities at the Education Booth provided me with lots of new contacts and ideas. Four years ago, then-president Don Ort asked if I would be willing to serve on the Education Committee. I agreed and found myself involved as an active participant in the workings of the Society.

What does it mean in terms of time, commitment, and effort to serve on an ASPP committee? Many members might shy away from involvement with the Society because of these very concerns. Two committee meetings a year do not take a major commitment, but yes, there can be an enormous amount of work when getting involved. Committee membership means that one must take on a new relationship with the Society. ASPP is no longer just on the giving end; you find yourself giving back, sometimes a great deal more than you expected.

So why get involved? Beyond the obvious reasons (it looks good on your CV and to your dean), involvement can offer new benefits. Involvement with your professional society is empowering. It provides you with the opportunity to affect the way your organization will approach problems in the years to come. It provides opportunities for mentoring (I am again reminded of Ellen Weaver). And it gives you the chance to get to know and interact with others who are involved with the leadership.

Membership on the Education Committee has recently provided me with additional opportunities as well. This past year, I represented ASPP at the American Institute of Biological Sciences’ President’s Summit. This summer, I will participate in a Project Kaleidoscope Keystone Conference on the Future of Education in Plant Biology. Very quickly, I have made connections with the chairs of education committees and presidents from other societies. These new connections will provide new opportunities to instigate changes at the national level. For example, as a member of an AIBS steering committee on undergraduate curricula in biology, I hope to assist in writing a document recommending prudent practices in the teaching of undergraduate biology. More work, yes, but what better reward than the possibility of seeing one’s own ideas put into practice?

At the annual meeting in San Diego, the Education Committee will open up the last half-hour of its own meeting to the membership. If you are interested in education and teaching, please join us. Get involved. It’s worth it.

Executive Committee Recommends Change in Bylaws

At the request of the Education Committee, the Executive Committee recommended at its February 12 meeting that the chair of the Education Committee become a member of the Executive Committee. This recommendation will require a change in the Society’s Bylaws and, therefore, must be voted on by the membership.

The Education Committee has been a standing committee of the Society for 10 years. During that time, it has been active and involved in innovative projects in education and has received recognition from other societies for taking the initiative on many new projects. Membership of the Education Committee chair on the Executive Committee will facilitate communication between the two committees and provide better representation of the committee’s role in the Society. The Education Committee urges you to vote yes on this issue.

Council on Undergraduate Research Honors

Students of ASPP Members at “Undergraduate Research Posters on the Hill”

Each year, 60 competitively selected undergraduate research posters are displayed at the U.S. Capitol as part of the Council on Undergraduate Research program “Undergraduate Research Posters on the Hill.” This year, two students of ASPP members participated in this event.

Brian Reese, a student of Peter Conrad and Janice Marchut Conrad, displayed his poster, titled “The Effect of DCMU in the Mitochondria of Chlamydomonas reinhardtii.” Brian’s work began in the Conrad’s Bio 490 course, which was highlighted in the Education Forum in the March/April 2000 issue of the ASPP NEWS. Brian has continued this work as part of his senior honor thesis.

Rachel West, who joined Zoran Ristic’s laboratory as a freshman, was honored for her poster, “A Study of Possible Chaperone Activities of Maize Chloroplast Protein Synthesis Factor EF-Tu.” Rachel is a sophomore biology major enrolled in the honors program at the University of South
Dakota and hopes to pursue a career in the plant sciences.

**ASPP Bookmarks Convey Principles of Plant Biology**

The first in a series of colorful, two-sided bookmarks highlighting various types of plants and the “Principles of Plant Biology” has been published by ASPP and can be seen in color on the ASPP Web site at [aspp.org/education/bookmark.htm](http://aspp.org/education/bookmark.htm). ASPP Education Committee Chair Carol Reiss designed these bookmarks for use by ASPP members and for distribution at plant science education events.

Eventually, the Education Committee plans to expand the bookmark page and include information about each photograph, as well as valuable links and references. This first bookmark explains in an attractive style and format principle number 7: “Plants exhibit diversity in size and shape ranging from single cells to gigantic trees.” *The Cube*, created a few years ago by Dina Mandoli, helped to inspire the development of bookmarks as a way to explain the Principles of Plant Biology.

If you are teaching an undergraduate plant physiology course and have a useful Web site to aid students and instructors, let Carol Reiss know (hcr@brown.edu). The committee is happy to add additional links to the Education page.

If you would like complimentary bookmarks, please contact Janice Jordan at ASPP (e-mail: jjordan@aspp.org).

### Phosphorus in Plant Biology

**Regulatory Roles in Molecular, Cellular, Organismic, and Ecosystem Processes**

Edited by
Jonathan P. Lynch
Jill Deikman

Proceedings
12th Annual Penn State Symposium in Plant Physiology
May 28–30, 1998

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**American Society of Plant Physiologists**
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Gatherings

The ASPP NEWS publishes dates, titles, locations, and contact names and addresses for meetings, seminars, and the like that are of interest to ASPP members. Submit announcements via e-mail to sbraxton@aspp.org or mail to Sylvia Braxton Lee, ASPP NEWS, 15501 Monona Drive, Rockville, MD 20855-2768 USA. Faxed transmissions are not accepted.

### 2000

#### JUNE

**June 11–16**  
International Symposium on Grapevine Physiology & Biotechnology  
Heraclion, Crete, Greece  
For information, contact Professor K. A. Rouhelakis-Angelakis, Department of Biology, University of Crete, PO Box 2298, 71409 Heraclion, Greece; telephone/fax +30-81-394459, e-mail poproube@biology.uch.gr. Also, visit the symposium Web site at http://www.biology.uch.gr/meetings.

**June 24-28**  
Molecular Biology of Model Legumes  
John Innes Centre, Norwich, United Kingdom  
Local scientific organizer: Martin Parniske (martin.parniske@bbsrc.ac.uk). To register contact UEA Conference Services, University of East Anglia, Norwich, NR4 7TF, UK; telephone +44-1603-593271, fax +44-1603-250585, e-mail legume@uea.ac.uk. Further details can be found at http://www.jic.biosrc.ac.uk/events/elm-2000/.

**June 24-28**  
XI International Conference on Arabidopsis Research  
Madison, Wisconsin  
Co-chairs: Detlef Weigel and Mary Lou Guerinot. For information, contact Mary Lou Guerinot at telephone 603-646-2527, fax 603-646-1347, e-mail Guerinot@Dartmouth.edu, Web site http://www.arabidopsis.org.

**June 29-July 1**  
Course: Database Design and Development for Genomics Research  
BioPharmaceutical Technology Center Institute  
Madison, Wisconsin  
For information, contact Jeff Blanchard, telephone 505-995-4405, e-mail jlb@ncgr.org, Web site http://www.btci.org/courses/Bioinformatics/DDDGROO.htm.

**June 29-July 2**  
Symposium on Biosynthesis of Glucose Polysaccharides  
Schema Continuing Education Building  
Iowa State University, Ames  
Registration deadline is May 30, 2000. For information, contact Plant Biochemistry and Molecular Biology Conferences, Symposium Office, 2208 Molecular Biology Building, Iowa State University, Ames, IA 50011-3260; telephone 515-294-7978, fax 515-294-2244, e-mail pbmb@iastate.edu, Web site http://molebio.iastate.edu/~gfstlphomepg.html.

#### JULY

**July 15–19**  
Plant Biology 2000: Seeding the Future  
San Diego, California  
Contact Susan Chambers, 15501 Monona Drive, Rockville, MD 20855-2768; telephone 301-251-0560, ext. 111, fax 301-279-2996, e-mail chambers@spp.org or on the World Wide Web see URL http://aspp.org/meetings/meetings.htm.

**July 16–21**  
Plant Molecular Biology Gordon Conference  
"Biological Regulatory Mechanisms"  
Plymouth, New Hampshire  
For information and application, contact the Gordon Research Conference, University of Rhode Island, PO Box 984, West Kingston, RI 02892-0984; telephone 401-783-4011. For online information and registration, go to http://www.grc.uri.edu/attend.htm. For further information, contact Robert L. Last at rob.last@cereon.com.

### FUTURE ASPP ANNUAL MEETING SITES

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**FEBRUARY**

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**JUNE**

June 21-25  
Meeting on the conservation of rare, endangered, and invasive species.
  
**JULY**

August 26-30  
International Congress on Plant Biology.

**AUGUST**

September 20-24  
International Conference on Vegetation Science.
topics, speakers, and a preliminary registration form, can be found at the GRC homepage at http://www.grc.uri.edu/.

August 16–20

4th International Fructan Symposium
Arolla, Switzerland
For registration forms and information, contact Secretariat Fructan-2000, Department of Botany, University of Basel, Helberstr. 1, CH-4056 Basel, Switzerland; telephone +41-61-267 23 11, fax +41-61-267 23 30, e-mail fructan2000@ubab.unibas.ch, Web site http://www.unibas.ch/bot/hebe/fructan2000/second/.

August 20–25

Gordon Conference on Plant Cell Walls
Kimball Union Academy, Merida
New Hampshire
Deborah Delmer, Chair; Dan Cosgrove, Cochair. Information on the program and how to register can be obtained from the Gordon Conference Web site at http://www.grc.uri.edu. Conference limited to 135 participants; preference given to speakers and those registrants who offer to present posters. Scientists from industries having interest in cell walls are also welcome to apply.

SEPTEMBER

September 3–5

Plant Nutrient Transport through Biological Membranes
German Society for Plant Nutrition
Giessen, Germany
For information, contact Sven Schubert, Institute of Plant Nutrition, Interdisciplinary Research Center, Justus Liebig University, Heinrich-Buff-Ring 26-32, D-35392 Giessen, Germany; telephone +49-641-99-39-160, fax +49-641-99-39-169, e-mail sven.schubert@ernahrung.uni-giessen.de.

September 6–8

Society for Experimental Biology, Plant Transport Group Meeting
University of Hertfordshire, United Kingdom
Organizers: R. Gordon-Weeks, M. J. Hawkesford, A. Miller, and P. Theodoulou and hosted by IACR Rothamsted. For information, please contact Ruth Gordon-Weeks, Biochemistry and Physiology Department, IACR Rothamsted, West Common, Harpenden, Herts, AL5 2JQ, UK; telephone +44-1582-763133, fax +44-1582-763010, e-mail ruth.gordon-weeks@bbsrc.ac.uk.

OCTOBER

October 3–6

Workshop: The Role of Invertases in Plant Carbohydrate Partitioning and Beyond
University of Regensburg, Germany
For information and registration, contact Thomas Roitsch, Lehrstuhl fuer Zellbiologie und Pflanzenphysiologie, Universitatsregensburg, 93040 Regensburg, Germany; telephone +49-941-943-3021, fax +49-941-943-3333, e-mail thomas.roitsch@biologie.uni-regensburg.de, Web site: http://www.biologie.uni-regensburg.de/invertase/.

NOVEMBER

November 6–10

SPARC 2000
2nd SPARC General Assembly
Stratospheric Processes and Their Role in Climate
Mar del Plata, Republic of Argentina
Biological Effects of UV Radiation. Call for Papers. A Special Associated Workshop on the impacts of UV on terrestrial and aquatic ecosystems will be held within the SPARC-2000 (Stratospheric Processes and Their Role in Climate) Congress, Mar del Plata, Argentina. Organizers: Walter Helbling and Virginia Villafañe (Estación de Fotobiología Playa Unión, e-mails fotobiologia@psarg.com or fotobiologia@arnet.com.ar). Aquatic Systems. Carlos Ballaré (Universidad de Buenos Aires; e-mail ballare@iserva.edu.ar). Terrestrial Systems (Web page: http://www.sparc2000.at/locen.uba.ar).

November 29–December 2

International Conference on "Tropical Agriculture Technology for Better Health and Environment"
Kasetsart University, Ramthaeng Sean Campus Nakhon Pathom, Thailand

DECEMBER

December 9–13

40th ASCB Annual Meeting
Moscone Convention Center
San Francisco, California
For information, contact us at telephone 301-530-7153, e-mail ascbinfo@ascb.org, Web site www.ascb.org/ascb.
ASPP Placement Service

This form may be used only by members of the American Society of Plant Physiologists. Please print or type your placement information on this form (curriculum vitae will not be accepted) and send it to Donna Gordon, ASPP Headquarters, 15501 Monona Drive, Rockville, MD 20855-2768 USA; e-mail dgordon@aspp.org.

LAST NAME
STREET ADDRESS
CITY

STATE
ZIP
COUNTRY

TELEPHONE
FAX
E-MAIL

I am seeking the following position (check all that apply):
[ ] Permanent [ ] Temporary [ ] Postdoctoral [ ] Industrial
[ ] Academic [ ] Government [ ] USA only [ ] Outside USA

US citizen? [ ] Yes [ ] No Date available: ________________

Fields of interest, specialties, and publications titles:

Thesis, dissertation topics, professor:

Professional societies and honors:

Degree/year | Major | Minor | College/university and location

Postdoctoral study (specialty and with whom, where, when):

Employer and location | From | To | Position, Title, Duties

References (names, addresses, telephone numbers):
I. Registering with the ASPP Placement Service and Obtaining Placement Files

ASPP headquarters in Rockville, Maryland, operates a placement service in which are kept active two files of resumes of individuals who are seeking employment. Employers are urged to survey the resume files for those seeking permanent positions and those seeking postdoctoral or similar positions. The files cost $25 each and may be ordered from Donna Gordon, ASPP Placement Service, 15501 Monona Drive, Rockville, MD 20855-2768 USA. Those seeking employment should complete the Placement Service Form on the previous page to be included in the service.

II. Placing a Position Ad in ASPP NEWS and on the ASPP World Wide Web Homepage

Submit all ads by e-mail to Sylvia Braxton Lee at sbraxton@aspp.org (or by mail to Sylvia Braxton Lee, 15501 Monona Drive, Rockville, MD 20855-2768 USA). Those seeking employment should complete the Placement Service Form on the previous page to be included in the service.

- Academic/Government/Industry Permanent Positions (Ph.D. level):
  Fee: $150. Includes listing in one issue of ASPP NEWS and 12 weeks on the ASPP online Job Bank.
  Word Limit: 200 for print ad; no limit for online ad.

- Postdoctoral Positions
  Fee: No charge for universities, non-profit organizations, and government installations; $150 for private companies. Includes listing in one issue of the ASPP NEWS and 12 weeks on the ASPP online Job Bank.
  Word Limit: 200 for print ad; no limit for online ad.

- Research/Technical Positions (non-Ph.D.)
  Fee: No charge for universities, non-profit organizations, and government installations; $150 for private companies. Includes listing in one issue of the ASPP NEWS and 12 weeks on the ASPP online Job Bank.
  Word Limit: 200 for print ad; no limit for online ad.

- Assistantships, Fellowships, Internships, etc.
  Fee: No charge; ad will appear in two issues of the ASPP NEWS (the first time at full length, the second time in an abbreviated form) and 12 weeks on the ASPP online Job Bank.
  Word Limit: None.

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ACADEMIC/GOVERNMENT/INDUSTRY PERMANENT POSITIONS (Ph.D.)

Research Food Technologist/Plant Physiologist
USDA/ARS, Beltsville, Maryland
(Received 03/15)

The USDA, Agricultural Research Service, Plant Sciences Institute, Horticultural Crops Quality Laboratory, Beltsville, Maryland, is seeking a permanent full-time research food technologist/plant physiologist, GS-12/13. Salary is commensurate with experience ($51,204–$77,155 per year) plus benefits. Candidate must be a U.S. citizen. Responsibilities: Conduct food technology research to improve methods for maintaining microbial safety and quality of fresh-cut fruits and vegetables that are cut, sliced, or diced and then packaged for commercial and retail use without further preparation; develop packaging technology and postharvest handling systems and implement strategies discovered from research on the interactions among human pathogens, plant pathogens, and their fruit and vegetable hosts to maintain microbial safety during preparation and marketing. Basic research includes elucidation of the regulatory mechanisms involved in plant senescence processes, including chlorophyll degradation, membrane changes, water loss, content of various volatile compounds, susceptibility to decay, and texture/flavor changes, as these processes relate to quality and microbial safety. Appropriate qualifying education in food technology/plant physiology and/or professional research experience is required. For research program information, contact Dr. Ken Gross at 301-504-6128 (kgross@ars.usda.gov). To address specific qualification requirements and application instructions, applicants must call 301-504-1484 to request announcement ARS-DOE-0224, or via Web site at http://www.ars.usda.gov/afm/hrd/resjobs.htm. Applications must be postmarked by July 31, 2000. USDA/ARS is an equal opportunity employer and provider.

Assistant Professor/Molecular Physiologist
University of Florida, Gainesville
(Received 03/24)

A 12-month tenure-track position, 70% research and 30% teaching, is available in the Agronomy Department, University of Florida. This assignment may change in accordance with the needs of the unit. Duties include developing and maintaining a molecular physiology research program on plant adaptation mechanisms to biotic and abiotic factors that occur under field conditions in Florida (emphasis on forages). A Ph.D. in plant physiology, plant biochemistry, genetics, or plant molecular biology is required. Required persons should submit the following items by the closing date: (1) letter of application, including a description of interests and qualifications; (2) curriculum vitae, including a list of publications; (3) official transcripts of all college or university work; and (4) names and addresses of four references from whom you have requested letters of recommendation. Refer to position no. 934040. Women and minorities are encouraged to apply. All of the above items must be postmarked by the closing date May 30, 2000, and sent to the Search and Screen Committee Chair, Dr. Maria Gallo-Meagher, University of Florida, Agronomy Department, PO Box 110300, Gainesville, FL 32611-0300; telephone 352-392-1823, ext. 206, fax 352-392-7248, e-mail mgmea@gnv.ifas.ufl.edu. The University of Florida is an equal opportunity/affirmative action employer.

Head Research Horticulturist
J P BioRegulators, Madison, Wisconsin
(Received 03/30)

JPB is a well-funded start-up corporation with rights to a novel plant growth regulator that enhances ripening and prolongs shelf life of fruits and vegetables. The product is in a late stage of development, but its market potential is significant, and it may be ready for testing in the near future. The position is available immediately, and the head research horticulturist will work closely with the company president to develop and manage a rapid-cycle R&D contract research program to discover efficacy in a wide range of crops and develop a marketable product. The position involves supervising a focused in-house R&D program to conduct formulation trials on cranberries and select other fruits, and (3) participate enthusiastically in a wide variety of changing duties associated with a well-funded start-up corporation. Candidates should possess a background in horticulture, plant physiology, plant biochemistry, and plant molecular biology and have demonstrated success in supervising a small research team.
Ph.D. in horticulture or a related field. Desired qualifications include experience supervising applied research, preferably in product development. Familiarity with PCR, postharvest storage losses, and modern analytic techniques is desirable. Demonstrated initiative and willingness to travel are required. Compensation will be commensurate with qualifications and experience, at least $70,000, plus benefits. Rapid company growth will provide good opportunities for personal development and advancement.

Interested candidates should submit a resume with references to J P BioRegulators, PMB 173, 6907 University Ave., Middleton, WI 53562-2767.

Faculty Position
Cold Spring Harbor Laboratory
Cold Spring Harbor, New York
(Received 04/05)

Cold Spring Harbor Laboratory is looking to fill a faculty position in Plant Biology, preferably at the assistant professor level. Outstanding graduate students will also be considered for our Cold Spring Harbor Laboratory Fellowship program. We seek an applicant who is working with Arabidopsis genetics, but an outstanding plant biologist working on other plant systems will be considered. The applicant will join a plant biology group that currently consists of three interactive faculty members, whose research focuses on developmental biology, plant genetics, and genomics. Existing research at CSHL is listed on our Web site at www.cshl.org. Applicants should submit a curriculum vitae, summary of research accomplishments, a research proposal, and names of three references to Dr. Bruce Stillman, Director, Cold Spring Harbor Laboratory, 1 Bungtown Road, Cold Spring Harbor, NY 11724. Cold Spring Harbor Laboratory is an equal opportunity employer and encourages applications from women and minorities.

Plant Molecular Biologist
DNA Plant Technology Corporation
Oakland, California
(Received 04/11)

DNA Plant Technology Corporation, an agricultural biotechnology company focused on fruits and vegetable products, has an opening for a plant molecular biologist in our fruit and vegetable quality program. We are seeking a recent Ph.D. with a minimum of two years' postdoctoral experience, preferably in the area of molecular plant physiology. Special consideration will be given to candidates with experience in postharvest physiology or fruit quality. Applicants should have demonstrated expertise in a wide area of molecular biology techniques, including RNA and DNA analysis, sequencing, vector construction, and PCR based methods. We are particularly interested in candidates wanting to apply cutting-edge technologies to real-world agricultural problems. We are committed to excellence in plant improvement by the development of high-quality, transgenic products. Interested individuals should send the names of three references, a resume, and a cover letter referencing Position #2000-04 to DNA Plant Technology, Attn: HR, 6701 San Pablo Avenue, Oakland, CA 94608; fax 510-450-9366. Visit DNA Plant Technology Corporation's Web site at www.dnapt.com.

POSTDOCTORAL POSITIONS

Postdoctoral Position
Institute of Plant Genetics and Crop Plant Research (IPK)
Gatersleben, Germany
(Received 03/01)

A postdoctoral position is available for studies on the intracellular regulatory network that coordinates the metabolic activities of the tetrapyrrole biosynthetic pathway in chloroplast and mitochondria. For more information, see http://www.ipk-gatersleben.de/english/vbbt-agv/ipkencs.txt. The position will initially be offered until the end of 2001 with extensions of up to three years possible. Preference will be given to applicants with experience of techniques in molecular biology and/or in biochemistry (HPLC, spectroscopy). Postdoctoral fellows and Ph.D. students with interest in plant molecular physiology and genetics are encouraged to send the application including a statement of scientific interests and curriculum vitae to Bernhard Grimm, Institute of Plant Genetics and Crop Plant Research (IPK), Corrensstr. 3, D-06466 Gatersleben, Germany; e-mail: grimm@ipk-gatersleben.de.

Postdoctoral Position
University of Alberta, Edmonton, Canada
(Received 03/03)

A postdoctoral position is available immediately to study the interactions between salinity and other environmental factors on forest plants. This position requires a good background in both field and laboratory plant physiology and basic biochemical techniques, as well as good communication skills. The successful candidate will carry out independent research and help with the supervision of graduate student projects and writing research reports. The research project is conducted in collaboration with the oil sands industry and aims at improving successful revegetation of saline reclamation areas. The annual salary will be $28,000 with the possibility of renewal. Please send your application (preferably by e-mail) containing a curriculum vitae and the names, phone numbers, and e-mail addresses of two references to Dr. Janusz J. Zwiezek, Department of Renewable Resources, University of Alberta, 4-42 Earth Sciences Bldg., Edmonton, AB, Canada T6G 2E3; telephone 780-492-2358; fax 780-492-1757, e-mail: janusz.zwiezek@ualberta.ca.

Postdoctoral Position
Salem-Telgoy University, Salem, West Virginia
(Received 03/07)

A postdoctoral position is available immediately to transform wetland species with cloned genes to develop a model for studying transgenic plant systems for enhanced phytoremediation of metal contamination. The individual will develop Agrobacterium transformation and selection systems, regenerate transformants, assay for expression, and verify gene integration. Experience with plant cell cultures is required. Strong background in molecular biology and Agrobacterium transformation preferred, but not required. Send curriculum vitae, publication reprints, unofficial transcripts, and names, addresses, and telephone numbers of three references to Dr. Suzanne Rogers, Department of Bioscience, Salem-Telgoy University, Salem, WV 26426; telephone 304-782-5585, fax 304-782-5579, e-mail: rogers@salem.wvnet.edu. EOE/AA.

Postdoctoral Position
University of Pennsylvania, Philadelphia
(Received 03/08)

A postdoctoral position is available to investigate plant ABC transporters, a new class of proton-pumping vacuolar-type PFase or phytochelatin biosynthesis in plants at the molecular and biochemical levels. A Ph.D. is required, and experience in protein or cellular biochemistry and/or molecular biology is desirable. For more detailed description of our research interests, see http://www.sas.upenn.edu/biology/faculty/roz/index.html. Please send a curriculum vitae, list of publications, and three letters of reference to Dr. Philip A. Rea, Plant Science Institute, Department of Biology, 3800 Hamilton Walk, University of Pennsylvania, Philadelphia, PA 19104-6018; fax 215-898-8780, e-mail: parca@sas.upenn.edu.

Postdoctoral Research Associates
Brown University, Providence, Rhode Island
(Received 03/14)

Several postdoctoral research associate positions are available in the field of plant and microbial tetrapyrrole biochemistry/molecular biology. Specific research projects include biosynthesis of hemes, chlorophylls, phytochelatins, and their precursors and the regulation of these processes. Initial appointments will be for one year, with reappointment contingent on satisfactory performance. Positions will be filled as suitable candidates are identified. Requirements are a Ph.D. degree and training and experience in biochemistry and/or molecular biology. Applications from individuals with experience and interest in plant systems are preferred. Applications should include a curriculum vitae and the names and addresses of three references and should be addressed to Samuel I. Beiles, Biomedical Research Center, Box C-14, Brown University, Providence, RI 02912. Applications may also be made by e-mail to sib@brown.edu. Brown University is an equal opportunity/affirmative action employer.

Plant Molecular Biologists
The Kumho Life and Environmental Science Laboratory, Kwangju, Korea
(Received 03/24)

The Kumho Life and Environmental Science Laboratory in Kwangju, Korea, invites applicants for postdoctoral and principal investigator positions. Research opportunities at KLES L are excellent in terms of research facility and budgetary support. We offer competitive salary, free housing, and attractive fringe benefits including children's educational expenses.
Applicants are requested to send in their curriculum vitae and arrange to have three letters of recommendation sent to Jin Cheol Jeong, KLESI, 572 Sang-Ang-Dong, Kwangju 506-712, Korea; telephone +82-62-970-2622, fax +82-62-972-5085, e-mail to psong@unistserve.unl.edu.

Technician/Postdoctoral Fellow  
J P BioRegulators, Madison, Wisconsin  
(Received 03/30)

JPF is a well-funded start-up corporation with rights to a novel PCR that enhances ripening and prolongs shelf life of fruits and vegetables. The technician will (1) conduct field trials to optimize formulation and quantify efficacy, (2) conduct laboratory experiments to develop new applications for this PCR, including development of a bioassay and developing shelf-stable formulations, and (3) participate enthusiastically in a wide variety of changing duties associated with a well-funded start-up corporation. Candidates should possess a Ph.D., an M.S., or a B.S. in horticulture or related discipline and have experience designing and conducting experiments. Must be capable of independent work and must be technically proficient. Strong academic background preferred. Compensation will be commensurate with qualifications and experience, at least $30,000, plus benefits. Interested candidates should submit a resume with references to J P BioRegulators, KLESL, 572 Sang-Am-Dong, Kwangju 506-712, Korea; telephone +82-62-970-2622, fax +82-62-972-5085, e-mail to psong@unistserve.unl.edu. Foreign applicants may use e-mail.

Postdoctoral Fellow  
Samuel Roberts Noble Foundation  
Ardmore, Oklahoma  
(Received 04/07)

A postdoctoral fellow position is available in the Plant Biology Division at The Samuel Roberts Noble Foundation to study the molecular and genetic aspects of plant DNA repair. The project emphasizes the molecular biology of DNA repair mechanisms and their relationship to cell cycle progression. Qualifications include a background in eukaryotic DNA repair or cell cycle mechanisms. Send a detailed resume and the names of three references to Laura Claypool, Position #PltBio31399A-1/2GM, The Samuel Roberts Noble Foundation, Inc., PO Box 2180, Ardmore, OK 73402. For further information about the Foundation and this position, please visit our Web site at www.noble.org.

Postdoctoral Position  
University of Connecticut, Storrs  
(Received 04/03)

Research focuses on structure-function analysis of cloned cyclic nucleotide-gated K(Ca) channels involved in signal transduction. We express these channels in oocytes and HEK293 cells for voltage clamp analysis after site-directed mutagenesis. We also study plant vanilloid effects on cloned mammalian pain receptor channel. I seek a scientist trained in voltage clamp methods and Pclamp; methods for DNA manipulation, oocyte preparation, and animal cell culture and transformation can be learned here. To apply, contact G. Berkowitz, Dept. of Plant Science U-67, 1376 Storrs Road, University of Connecticut, Storrs, CT 06269-4067; telephone 860-486-5940, e-mail gerald.berkowitz@uconn.edu.

Postdoctoral Position  
Virginia Tech, Blacksburg, Virginia  
(Received 04/06)

A postdoctoral position is available for two years, starting between July and October 2000. The successful candidate will study the mechanism of substrate specificity and catalysis in plant beta-glycosidases. Applicants should have strong background in molecular biology or protein biochemistry. Experience is desirable in standard recombinant DNA techniques, including cDNA synthesis, cloning and expression, library screening, enzyme purification and characterization, and molecular modeling. Experience with plant systems is not necessary. Candidates who have prior experience with protein expression in yeast or E. coli will be given strong preference.

There will be an opportunity to learn homology modeling (in Blacksburg), protein crystallization and 3-D structure determination at the collaborator’s (Bernard Henriassat) laboratory in Marseille, France. Please send curriculum vitae, list of publications, and names of three references to Dr. A. Esen, Department of Biology, Virginia Tech, Blacksburg, VA 24061-0406; telephone 540-231-5894, fax 540-231-9307, e-mail aevan@vt.edu. Foreign applicants may use e-mail.

Postdoctoral Position  
Waksman Institute, Rutgers—The State University of New Jersey  
Piscataway, New Jersey  
(Received 4/10)

A position is available to study signal transduction during resistance responses in Arabidopsis and tobacco to microbial pathogens. The research will involve molecular and genetic approaches to define components of the salicylic acid–mediated signaling pathway (e.g., Plant Cell 11, 191; 1999) and the pathway leading to resistance to turnip crinkle virus in Arabidopsis (Plant Cell 12, 677; 2000). Send a curriculum vitae and a cover letter detailing experience and have three letters of recommendation sent to Daniel Klis, Waksman Institute, Rutgers—the State University of New Jersey, 190 Frelinghuysen Road, Piscataway, NJ 08854; after September 1, 2000, Boyce Thompson Institute, Cornell University, Tower Road, Ithaca, NY 14853. Rutgers and BTI are equal opportunity/affirmative action employers.

Postdoctoral Position  
University of Heidelberg, Germany  
(Received 04/17)

A 30-month postdoctoral position is available to join a HFSP-funded research program focusing on the biogenesis and transport pathways to protein storage vacuoles (Plant Cell 11, 1509–1524; 1999). We want to identify legumin-binding proteins, and to characterize “dense vesicle” membrane proteins. Applicants should have a strong background in plant biochemistry and molecular biology. Salary is according to the German BATTIa salary scheme. Candidates should send a curriculum vitae plus the names, addresses, and telephone numbers of the references to Prof. Dr. David G. Robinson, Zellenlehre, University of Heidelberg, Im Neuenheimer Feld 230, D-69120 Heidelberg. e-mail drobins@uni-goettingen.de.

Postdoctoral Research Position  
Samuel Roberts Noble Foundation  
Ardmore, Oklahoma  
(Received 04/18)

A postdoctoral position is immediately available in the Forage Biotechnology Group of The Samuel Roberts Noble Foundation. The successful candidate will work on genetic manipulation of lignin biosynthesis to improve digestibility of forage grasses. Applicants should have a Ph.D. with a strong background in plant molecular biology and/or biochemistry. Annual salary is in the range of $31,090 to 46,630, depending on qualifications and experience. Application and job description are obtainable from our Web site at www.noble.org. For details of the project, contact Dr. Zengyu Wang at zwang@noble.org or 580-221-7368. For an application, send a cover letter, a detailed curriculum vitae, and arrange for three letters
of reference to be sent to Ms. Jane Nance, Human Resources Department, Attn: Job# FBC1000P-2W, The Samuel Roberts Noble Foundation, PO Box 2180, Ardmore, OK 73402.

Postdoctoral Position
Iowa State University, Ames
(Received 04/21)
A postdoctoral position is available to study the soybean-Phytophthora sojae interaction. We have recently identified candidates for the Phytophthora resistance gene Rps1-k through positional cloning. The candidate will be able to contribute toward molecular characterization of the complex Rps1-k locus. Candidates with a background in genetics, plant pathology, biochemistry, and molecular biology are strongly encouraged to apply. The position will start August 1, 2000, in the Iowa State University. For more information, please contact Dr. Madan K. Bhattacharyya, Plant Biology Division, Noble Foundation, PO Box 2180, Ardmore, OK 73402; telephone 580-221-7380, fax 580-221-7380, e-mail MKBhattacharyya@noble.org.

A postdoctoral position is available to construct a soybean yeast artificial chromosome (YAC) library. The candidate will be able to apply this library in cloning genes that are involved in the expressions soybean resistance against Phytophthora sojae. Candidates with experiences in high molecular weight DNA and YAC or BAC cloning are strongly encouraged to apply. The position will start August 1, 2000, at Iowa State University. For more information, please contact Dr. Madan K. Bhattacharyya, Plant Biology Division, Noble Foundation, PO Box 2180, Ardmore, OK 73402; telephone 580-221-7380, fax 580-221-7380, e-mail MKBhattacharyya@noble.org.

A postdoctoral position is available to clone genes from a trichome cDNA library and determine gene function using antisense/co-expression (e.g., Ph. E. coli). Candidates must have experience with soybean tissue culture as demonstrated by publication record. Qualified candidates should send a curriculum vitae, which includes a publications list and a description of research experience, along with the names of three references, to Dr. Chung-Jui Tsai, Assistant Professor, Plant Biotechnology Research Center, School of Forestry, Michigan Technological University, Houghton, MI 49931; fax 906-487-2915, e-mail chtsai@mtu.edu. This position will remain open until a qualified candidate is found.

This project (NSF/USDA funded) entails studying secondary products—metabolism in trichome glands. Long-range goals are to increase trichome-based disease and pest resistance and to develop a trichome-based molecular farming system. Duties: Clone genes from a trichome cDNA library and determine gene function using antisense/co-suppression or expression in E. coli. Also, possible subcellular localization studies (in situ hybridization). The position provides an opportunity to learn biochemistry. Experience in the relevant molecular techniques is essential. Send letter and resume ASAP to C. Wagner, University of Kentucky, Department of Agronomy, Lexington, KY 40546-9001; telephone 859-257-5974, fax 859-323-1077, e-mail gwagner@ca.uky.edu, Web site http://www.uky.edu/~gwagner.

The University of Delaware is leading a consortium investigating the genetics of oil deposition in maize embryos using a combination of gene expression analysis and candidate gene association with quantitative trait loci (http://arrayags.udel.edu). Qualifications for this position include a Ph.D. in plant genetics with some molecular biology experience in gene expression studies. Please send a curriculum vitae and three letters of reference to Dr. Bertrand Lemieux, Department of Plant & Soil Sciences, Newark, DE 19717; fax 302-831-0605; e-mail blmieux@udel.edu. The University of Delaware is an equal opportunity employer that encourages applications from minority group members and women.

A postdoctoral position in plant cell biology is available immediately to investigate the effects of combining genes encoding hydrolytic enzymes and antibiotics in transgenic strains of the mycoparasitic Trichoderma viride on the biological control of seedling diseases. Optimal gene suites will be examined for in vitro inhibition and in vivo ecological competency in transformed strains. Qualifications: Ph.D. in microbiology or related field with an emphasis in molecular biology. Those interested should send a curriculum vitae and the names, phone numbers, and e-mail addresses of three references to Dr. Chuck Kenerley, Department of Plant Pathology and Microbiology, Texas A&M University, 2132 TAMU, College Station, TX 77843-2132; fax 409-845-6453, e-mail kenerley@psras.tamu.edu.

Four postdoctoral positions are immediately available at the Plant Physiology department of the University of Amsterdam. Successful candidates will work on different aspects of phospholipid-derived second messengers in plant signal transduction. Projects are for two or three years and include cloning signaling enzymes (e.g. PLC, PLD, and PI3K), purification and characterization of lipid second messenger targets (e.g. those for PA or PI(3,5)P2), and developing novel optical techniques to visualize lipid signaling using GFP coupled to lipid-binding domains (e.g. PI(4,5)P2). Applicants should have a Ph.D. with a strong background in plant molecular biology and/or biochemistry. Annual salary is $28,000 to $36,000, depending on qualifications and experience. For applications, send a curriculum vitae, a cover letter detailing experience, and names and addresses of three references by July 1 to Dr. Teun Munnik, Department of Plant Physiology, Swammerdam Institute for Life Sciences, University of Amsterdam, Kruislaan 318, NL-1098SM, Amsterdam, The Netherlands; e-mail Munnik@ibi.uva.nl.

A postdoctoral position is available in biochemistry and molecular engineering of plant one-carbon and sulfur metabolism, including synthesis of the cinnamyl hydroxyacetate DMSP (Plant Cell 11, 1485-1497, 1999; Plant Physiology, 120, 945-949, 1999; J. Biol. Chem. 274, 36089-36096, 1999; see also http://www.hos.ufl.edu/metereng/ JCpage1.html). A strong background in biochemistry (preferably including enzyme purification) is required; cDNA cloning and plant transformation experience is essential. Applicants must have good scientific writing skills and be able to work independently. Please send a curriculum vitae, a cover letter describing research interests and experience, and names of three references to Andrew Hanson, University of Florida, Horticultural Sciences Department, Gainesville, FL, 32611-0690; telephone 352-392-1928, ext. 334, e-mail adh@gnl.ifas.ufl.edu.
RESEARCH/TECHNICAL POSITIONS
(Non-Ph.D.)

Assistant Scientific Editor
Washington State University, Pullman
(Received 03/10)

A full-time temporary 12-month exempt faculty position is available. Responsibilities: proofread/edit scientific manuscripts for technical accuracy, sentence structure, and grammar; manage office and record-keeping system; oversee manuscript review process from submission to publication; supervise program assistant. Position requires knowledge of standard English; scientific editorial practices; chemistry, biochemistry, and plant molecular biology; and computers/software, e-mail applications, and web browsers. Position also requires effective communication skills and the ability to supervise others, work independently, prioritize, and organize work efficiently, handle multiple tasks, make independent judgments, and plan/assign the work of others. Required qualifications: baccalaureate degree in chemistry, biochemistry, or related field; one year of editorial experience or equivalent; computer literacy. Preferred qualifications: master's degree in biochemistry or chemistry; one year of editing a scientific journal, supervisory experience. Salary is $28,000–$30,000 per year, depending on qualifications/experience. Submit a letter of application, current curriculum vitae, and the names, addresses, and telephone numbers of three current references to Norman G. Lewis, Regional Editor of North America and the Asia for Phytochemistry, Washington State University, PO Box 648340, Pullman, WA 99164-6840. Application review begins April 12 and will continue until position is filled. WSU is an EEO/AA employer.

Sales Horticulturist
J P BioRegulators Madison, Wisconsin
(Received 03/30)

J PB is a well-funded start-up corporation with rights to a novel plant growth regulator that enhances ripening and prolongs shelf life of fruits and vegetables. This product is in a late stage of product development for cranberries. The sales horticulturist will (1) arrange and conduct on-farm trials in cranberries in preparation for sales, (2) sell directly to cranberry farmers by demonstrating economic benefits, (3) contribute to R&D through supervision of trials at research locations throughout the country, (4) work with an outside firm to develop promotional materials, and (5) participate enthusiastically in a wide variety of changing duties associated with a well-funded start-up corporation. Qualifications include an M.S. in horticulture or related field or extensive experience that involves working directly with farmers. Candidates should be self-motivated, willing to travel, and possess good selling skills and a solid technical background. Compensation will be commensurate with qualifications and experience, with a $55,000 base and bonus package based on sales performance, plus benefits. Rapid company growth will provide an excellent opportunity for advancement. Interested candidates should submit a resume with references to J P BioRegulators, PMB 173, 6907 University Ave., Middleton, WI 53562-2767.

Senior Research Assistant
The Samuel Roberts Noble Foundation
Ardmore, Oklahoma
(Received 04/11)

A senior research assistant position is immediately available in the Forage Biotechnology Group of The Samuel Roberts Noble Foundation. The successful candidate will provide technical support in plant tissue culture, molecular cloning, and generation of transgenic plants. Master's degree in molecular biology, genetics, biochemistry, plant sciences, or related areas is required. Annual salary is in the range of $26,140–$39,200, depending upon qualifications and experience. An application and the job description are obtainable from our Web site at www.noble.org. For details, contact Dr. Zeng-yu Wang by e-mail at zywang@noble.org or telephone 909-221-7506. To apply, please send a letter of application and a detailed curriculum vitae and arrange for three letters of reference to be sent directly to Ms. Jane Nance, Human Resources Department, Attn: Job # FC08200-12W, The Samuel Roberts Noble Foundation, PO Box 2180, Ardmore, OK 73402.

Research Assistant—Plant Molecular Biologist
Arcaris, Inc., Salt Lake City, Utah
(Received 04/19)

Arcaris, Inc., is a cutting-edge biotechnology company located in Salt Lake City, Utah. We have developed novel molecular methods for identifying pharmaceutical targets for cancer and other pathological diseases. We are currently adapting our advanced technologies to the field of plant biology. The successful candidate must hold a B.Sc. degree with one to two years of laboratory work experience or an M.Sc. degree in a scientific discipline (plant biology and molecular biology preferred). Technical experience with Agrobacterium-mediated plant transformation and/or plant cell suspension culture and knowledge of general molecular biology techniques are required. Experience in one or more of the following fields is desirable: plant viruses, microbial pathogenesis, cDNA library construction, and expression of recombinant proteins in eukaryotic and prokaryotic cells. Responsibilities are to perform biochemical, genetic, and molecular analysis of transgenic plants and to help build recombinant gene constructs for plant transformation. We offer an excellent benefits package including stock options, medical and dental coverage, relocation assistance, accrued paid time off, and paid holidays. To apply please fax a cover letter and resume to 801-303-0351 or mail to Human Resources, at 615 Arapahoe Drive, Suite 300, Salt Lake City, UT 84108.

ASSISTANTSHIPS, FELLOWSHIPS, INTERNSHIPS, ETC.

Graduate Assistantship
University of Florida, Gainesville
(Received 03/07)

A half-time Ph.D. assistantship is available (beginning summer/fall 2000) at the School of Forest Resources and Conservation, University of Florida, Gainesville. The successful applicant will undertake a research project examining leaf area, biomass allocation, and nutrient and water use efficiencies of intensively managed short rotation hardwood/pine plantations using a fritigation trial. Minimum qualifications include a master's degree in forestry or in any biological science with strong interests in ecophysiology/tree nutrition, good written and oral communication skills, 3.0 GPA, and a GRE score of 1000 (Verbal and Quantitative). Interested students should send a letter of interest, resume, transcripts (photocopy is acceptable), GRE score (photocopy is acceptable), and names and addresses of three references to Dr. Shibu Jose, School of Forest Resources and Conservation, 5988 Hwy 90, Building 4900, PO Box 3634, University of Florida, Gainesville, FL 32611-0690; telephone 850-936-2032, fax 850-936-2637, e-mail sjose@ecn.georgia.edu.

Graduate Assistantship
University of Florida, Gainesville
(Received 04/11)

A half-time Ph.D. assistantship is available (beginning summer/fall 2000) at the School of Forest Resources and Conservation, University of Florida, Gainesville. The successful applicant will undertake a research project examining leaf area, biomass allocation, and nutrient and water use efficiencies of intensively managed short rotation hardwood/pine plantations using a fritigation trial. Minimum qualifications include a master's degree in forestry or in any biological science with strong interests in ecophysiology/tree nutrition, good written and oral communication skills, 3.0 GPA, and a GRE score of 1000 (Verbal and Quantitative). Interested students should send a letter of interest, resume, transcripts (photocopy is acceptable), GRE score (photocopy is acceptable), and names and addresses of three references to Dr. Shibu Jose, School of Forest Resources and Conservation, 5988 Hwy 90, Building 4900, PO Box 3634, University of Florida, Gainesville, FL 32611-0690; telephone 850-936-2032, fax 850-936-2637, e-mail sjose@ecn.georgia.edu.

Graduate Assistantship
University of Florida, Gainesville
(Received 03/07)

A graduate research and teaching assistantship (master's or Ph.D. level) is available at the Horticultural Sciences Department, University of Florida, Gainesville. The research program is on herbicide safer induced gene expression in the model plant Arabidopsis thaliana using DNA microarray technology. The ideal candidate will be motivated in plant molecular biology research. The assistantship is restricted to U.S. citizens and permanent residents only and requires a minimum total of 1000 in verbal and quantitative parts of the GRE. The assistantship will pay up to $18,000 (master's) or $16,000 (Ph.D.) per year with a tuition waiver. Information on graduate studies at the University of Florida, Gainesville, can be obtained from http://web.crtge.ufl.edu/education/. To apply, please mail a curriculum vitae and the names of three references to Dr. Bala Rathanasabapathi, Assistant Professor, Plant Molecular and Cellular Biology Program, Horticultural Sciences Department, University of Florida, Gainesville, FL 32611-0690.

Graduate Assistantships
University of Florida, Gainesville
(Received 03/10)

Research/teaching assistantships are available for studies leading to an M.S. or a Ph.D. degree. Program areas include plant production and nutrition, plant physiology, postharvest physiology and technology, biochemistry, molecular biology, seed physiology, and plant breeding and genetics. Stipends range from $14,000 to $15,000 plus a tuition waiver. The diverse climatic conditions and cultural practices in Florida offer research opportunities with temperate, subtropical, and tropical commodities. U.S. applicants are encouraged to apply. For further information, contact Dr. D. J. Huber, Graduate Coordinator, Horticultural Sciences Department, PO Box 110690, University of Florida, Gainesville, FL 32611-0690; telephone 352-392-1928, ext. 216; e-mail rgoete@ufl.edu.

Ph.D. Assistantship
University of Florida, Milton
(Received 04/11)

A half-time Ph.D. assistantship is available (beginning summer/fall 2000) at the School of Forest Resources and Conservation, University of Florida, Gainesville. The successful applicant will undertake a research project examining leaf area, biomass allocation, and nutrient and water use efficiencies of intensively managed short rotation hardwood/pine plantations using a fritigation trial. Minimum qualifications include a master's degree in forestry or in any biological science with strong interests in ecophysiology/tree nutrition, good written and oral communication skills, 3.0 GPA, and a GRE score of 1000 (Verbal and Quantitative). Interested students should send a letter of interest, resume, transcripts (photocopy is acceptable), GRE score (photocopy is acceptable), and names and addresses of three references to Dr. Shibu Jose, School of Forest Resources and Conservation, 5988 Hwy 90, Building 4900, PO Box 3634, University of Florida, Gainesville, FL 32611-0690; telephone 850-936-2032, fax 850-936-2637, e-mail sjose@ecn.georgia.edu.
Graduate Assistantships
Kansas State University, Manhattan
(Received 04/18)
Two graduate assistantships (M.S. and Ph.D.) are available immediately in the turfgrass stress physiology program, Kansas State University, Manhattan. If interested, please contact Dr. Bingru Huang, Department of Horticulture, Kansas State University, Manhattan, KS 66506; telephone 785-532-1429, e-mail bhuang@oa.ksu.edu.

Graduate Assistantship
North Dakota State University, Fargo
(Repeat)
For information about the research project and application requirements, please contact Dr. Marc D. Anderson, Assistant Professor, Department of Botany/Biology, North Dakota State University, Fargo, ND 58105; telephone 701-231-6486, fax 701-231-7199, e-mail Marc_Anderson@ndsu.nodak.edu. (Details March/April 2000, ASPP NEWS)

Graduate Assistantship
Iowa State University, Ames
(Received 04/20)
A research assistantship is immediately available for studies leading to an M.S. or a Ph.D. degree in the Agronomy Department, Iowa State University, Ames. The candidate will be able to contribute toward understanding the molecular basis of the soybean-Phytophthora sojae interaction. The disease resistance gene Rps1-k has been shown to be stable in providing resistance of soybean lines against P. sojae for nearly two decades. We have recently identified candidates for this gene through positional cloning. The high-resolution mapping data indicate that this locus carries several functional Rps1-k homologues. The candidate will be able to choose one of several projects, such as (1) characterization of the complex Rps1 locus, which carries six functional Rps1 alleles, including Rps1-k (2) characterization of candidate signal transduction mutants that fail to express resistance against this pathogen and (3) characterization of the complex Rps4 and Rps6 loci by mapping NBS-like resistance gene sequences that co-segregate with these two loci. Candidates with a strong background in genetics, plant pathology, and molecular biology are strongly encouraged to apply. Applicants should send GRE scores, transcripts, three letters of reference, reprints, and a personal letter describing professional goals to Dr. Madan K. Bhattacharyya, Plant Biology Division, The Samuel Roberts Noble Foundation, PO Box 2180, Ardmore, OK 73403; telephone 580-221-7390, fax 580-221-7380, e-mail MBhattacharyya@noble.org.

Graduate Assistantships
University of Florida, Gainesville
(Repeat)
For information, contact Dr. D. J. Huber, Graduate Coordinator, Horticultural Sciences Department, PO Box 110690, University of Florida, Gainesville, FL 32611-0690; telephone 352-392-1928, ext. 216, e-mail veg0@ufl.edu. (Details March/April 2000, ASPP NEWS)

Graduate Research Assistantships in Seed Biology
Louisiana State University, Baton Rouge
(Repeat)
Contact Dr. Marc Alan Cohn, Department of Plant Pathology and Crop Physiology, Louisiana State University, Baton Rouge, LA 70803; telephone 225-388-1464, e-mail mcohn@lsu.edu. The LSU Web site is http://www.lsu.edu. (Details March/April 2000, ASPP NEWS)

National Needs Graduate Fellowships
University of Missouri—Columbia
(Repeat)
Please refer to the IPG Web site at http://www.plantgroup.org for information on programs and for an online application form. Direct inquiries to Joe Polacco by telephone at 573-882-4789 or e-mail PolaccoJ@missouri.edu. (Details March/April 2000, ASPP NEWS)

Graduate Assistantships
University of Memphis, Tennessee
(Repeat)
If interested, contact Graduate Coordinator (wgutzke@memphis.edu) providing a statement of research interests, GPA, GRE, and advanced subject test scores (if available). Applicants interested in plant eco-physiology and/or wetland ecology may contact Dr. S. R. Pezeshki at SRPEZSHK@memphis.edu. (Details March/April 2000, ASPP NEWS)
# ASPP Headquarters Telephone Extensions and E-Mail Directory

For your convenience, keep this listing of extension numbers and e-mail addresses handy when you contact ASPP headquarters so that you can reach the person best able to assist you.

Our office telephone number is 301-251-0560

<table>
<thead>
<tr>
<th>Extension</th>
<th>Name</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
<td>115</td>
<td>John Luck Jr.</td>
<td><a href="mailto:Johnl@app.org">Johnl@app.org</a></td>
</tr>
<tr>
<td>111</td>
<td>Susan Chambers</td>
<td><a href="mailto:susan@app.org">susan@app.org</a></td>
</tr>
<tr>
<td>140</td>
<td>Sandra Gibson</td>
<td><a href="mailto:sandra@app.org">sandra@app.org</a></td>
</tr>
<tr>
<td>142</td>
<td>Kelly Bloom</td>
<td><a href="mailto:kelly@app.org">kelly@app.org</a></td>
</tr>
<tr>
<td>143</td>
<td>Stephanie Luna</td>
<td><a href="mailto:steph@app.org">steph@app.org</a></td>
</tr>
<tr>
<td>114</td>
<td>Brian Nipps</td>
<td><a href="mailto:brian@app.org">brian@app.org</a></td>
</tr>
<tr>
<td>121</td>
<td>Beth Scuderi</td>
<td><a href="mailto:beth@app.org">beth@app.org</a></td>
</tr>
<tr>
<td>118</td>
<td>Melissa Junior</td>
<td><a href="mailto:melissa@app.org">melissa@app.org</a></td>
</tr>
<tr>
<td>139</td>
<td>Lauren Robinson</td>
<td><a href="mailto:lauren@app.org">lauren@app.org</a></td>
</tr>
<tr>
<td>120</td>
<td>Dennis Kesler</td>
<td><a href="mailto:dennis@app.org">dennis@app.org</a></td>
</tr>
</tbody>
</table>

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