Challenges for the Future of Our Society

As I assume the role of president of our Society, I find myself recalling the ancient curse “May you live in interesting times.” These are indeed interesting times for the Society, and whether they turn out to be a curse or a blessing for us will depend very much on how we as members respond to several important emerging issues that will undoubtedly affect our future. In this, my first message to you, I would like to outline what I believe are the major challenges ahead and what I believe are the goals we should set for ourselves as we enter this new millennium.

Defining Who We Are and What We Do

In my opinion, the biggest challenge facing the Society is to convince the next generation of plant scientists that our existence is important to them and that they should want to play a role in the Society. For decades, ASPP represented a fairly small and homogeneous group of scientists who defined themselves clearly as engaging primarily in the study of plant physiology. Thus, the name “American Society of Plant Physiologists” has served us well through the years. At our most recent Executive Committee meeting, it was voted to discuss a name change, with the objective of expanding the membership, particularly our younger membership. I know that some of our members still believe that the term “physiologist” can be interpreted broadly enough to continue to represent us well and can be easily interpreted to include the disciplines of biochemistry, genetics, and molecular biology. Yet I also know many scientists, especially those of our younger generation, who interpret the word “physiology” much more narrowly. One can argue the semantics of this issue endlessly, but I doubt that many of our younger scientists will be much interested in, or influenced by, these arguments. The fact is that the field of plant science has broadened dramatically in the past decade, and it may be time to consider changing the name of the Society to reflect this broader base. After much discussion and consultation, the new name proposed, which seems to describe us best, is perhaps the simplest of all: The American Society of Plant Biologists. Because it is simple, it is also inclusive.

I, personally, do not take this issue lightly. I am of the older generation who has a great fondness for this Society, and its name is intimately tied to my feelings about it. But, in the end, I care much more about the future than the past, and if this change can make even a small difference in helping the next generation see ASPP as the major organization that represents them, then I conclude it is in our best interests to embrace the change. The Executive Committee has agreed that this is an issue that needs to be addressed now, and, to this end, we shall be asking the membership to engage in a discussion of the issue throughout the year. We shall be creating on our Web site a page to post member opinions. We urge those of you who feel strongly about this issue one way or the other to place your comments there, and we urge all of you to visit this site to see how the debate progresses and to help yourself form your own opinion on the issue. There will also be an opportunity to discuss a name change at the business meeting that will be held in conjunction with the annual meeting in

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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

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ASPP NEWS is distributed to all ASPP members and is published six times annually, in odd-numbered months. It is edited and prepared by ASPP staff from material provided by ASPP members and other interested parties.

Copy deadline is the 10th day of the preceding even-numbered month (for example, December 10 for January/February publication). Submit copy by e-mail whenever possible; submit all other copy by mail, not by fax.

Contact: Nancy A. Winchester, Editor, ASPP NEWS, 15501 Monona Drive, Rockville, MD 20855-2768 USA; e-mail nancyw@aspp.org; telephone 301-251-0560, ext. 117.

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San Diego this summer. This year, the Constitution and Bylaws Committee will be asked to formulate the wording for a proposed name change, and, assuming Executive Committee approval of the wording, the proposal will be placed on a mail-in ballot for vote by the membership in the fall of 2000.

Having said all this, I firmly believe that our name is only a small part of the greater issue of attracting the next generation of young scientists to become part of this Society. When many of us entered the field of plant biology, our Society, its journal *Plant Physiology*, and its annual meeting provided the major outlets for scientific communication. But our younger generation now has many more options for choices of meetings to attend and for ways to interact socially, and certainly many more options for journals in which to publish their results. Furthermore, libraries will be subscribing to online versions of our journals that will provide free access to individuals at an institution, making membership no longer necessary if online access to *The Plant Cell* and *Plant Physiology* was the major motivation for joining ASPP. So why do they need us?

I am convinced that a compelling case can be made that this Society does important things for its members that no other organization can do. For one thing, we can impress on these younger members that what we do affects their research budgets more than they ever realized. Thus, those who are more research oriented should know that this Society in the past few years has become the major voice for plant biology on Capitol Hill. Hiring Brian Hysn was a stroke of genius! For, in Brian, we have a person who is in constant contact with granting agencies and with Congress and who alerts all of us to the need to support legislation critical to maintaining strong support for scientific research in general and for plant biology specifically. Our Public Affairs Committee, under the very able recent leadership of Lou Sherman, also works hand-in-hand with Brian to address critical legislative issues, and the Society often calls on its members to meet with congressional representatives or to testify on issues critical to plant biology. These issues go beyond just legislation. Without question, the changing attitudes of our population toward the issue of genetically modified organisms (GMOS) is serious and can impact our ability to do science in many different ways. ASPP has an obligation to contribute to this ongoing debate by providing factual, unbiased information on these issues to both politicians and the general public, and we will be doing so extensively in the years to come. We have a critical need for input and help in this endeavor from our younger generation, who are the most heavily involved in research related to genetic engineering. Our members also need to understand that journals of high standard do not come for free, and the fact that our Society publishes two of the most prestigious in the field at the lowest possible subscription prices is no small reason to hope this Society continues to thrive. For those more oriented toward the teaching of plant biology, the Society has moved aggressively in the past few years to meet their needs as well and to draw them into our many activities. Our Education Committee has become increasingly active in recent years and offers many opportunities to interact and exchange information in various publication, workshop, and meeting formats. In addition, the Society is strongly committed to enhancing career opportunities for women and minorities, and we have dedicated committees working vigorously to promote these goals.

It is clear to me that the only people reading this article are those who are already members of the Society, and nobody reads these newsletters unless they are really interested in this organization! So, I know I am preaching here to the converted, and this is where you come in. I am asking all of you to support the idea that we need to engage our younger generation and convince them that the existence of this Society is in their interests, and that at a minimum they need to become members and preferably also become engaged in working for the Society through service on committees, attendance at annual meetings, and support of our journals. Another way you can help is by pointing out that public service is a part of your consideration of them as well-rounded scientists for the process of merits and promotions. I also urge you to feel free to suggest names to us of young scientists you think could contribute effectively in specific roles within the Society.

**Electronic Publishing—How to Publish and Not Perish**

It is only a matter of time before the major format for publication of research articles will shift from paper to electronic form. If you have not followed the debate about the advent of “free-to-all” electronic publishing via PubMed Central (formerly E-biomed and then E-biosci), I urge you to check our Web site for updated information on this emerging development and take a look at member responses (http://aspp.org/ebiosci/ebiosci.htm). Whereas some societies gain their major revenues from annual meetings, ours come primarily from our publication efforts. These are the revenues that we use to support the types of good works for our members that I have discussed above. It is not likely that our annual meetings can ever become very profitable, because most of our profits come from exhibitors, and we are not a large enough society to hope to generate much revenue in this way. Yet the prospect of PubMed Central is very exciting, and we must always remember that the Society is here to serve its members in the best way possible. So we must find a way to steer a thoughtful course that will maintain the best possible publishing environment for our members and also allow us to continue to serve our members with the many other benefits we can currently provide to them. This will be a major challenge in the years ahead, but we are helped greatly in this by having a dedicated executive director in John Lisack, an outstanding publications staff headed by Nancy Winchester, a dedicated Publications Committee headed by Becky Chasan, and talented editors and editorial boards for our journals. Working together I feel confident that the Society will have the wisdom to steer in the right direction.

**Education Foundation—Who Is the Audience and What Is the Message?**

In the past year, your officers and staff spent considerable time discussing the Education Foundation, and past president Brian Larkins has discussed this in the newsletter well. As a result of these discussions, Bob Goldberg has volunteered to lend his time, talents, and imagination to setting a future course as chair of the foundation board of directors. Under his guidance, I feel confident that the foundation will define the messages we want to put out, the audiences we want to reach, and the mechanisms by which these tasks can be accomplished. For me to say more than this now would be to preempt Bob, so I will end only by saying that I have full confidence in him and look forward to the time when the goals we originally envisioned for this foundation become realized.

With your help and involvement, I feel confident that ASPP will meet the challenges of the new millennium and continue to thrive and serve its members effectively.

Debby Delmer
University of California, Davis
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Dear Editor:

Two quotes from the September/October ASPP NEWS: On page 3, Brian Larkins says “In the future, the ASPP Education Foundation will have the opportunity to become a key source of unbiased, scientifically accurate information about plants and genetically altered crops.” On page 14, you headline “Monsanto Supports ASPP Education Foundation.” Isn’t there at least the appearance of a contradiction here? Lest you think I am being unduly sensitive, one of our best newspapers in Britain has recently run an “expose” of a supposed conflict of interest because Lord Sainsbury, the UK minister responsible for biotechnology, founded the Sainsbury Laboratory in Norwich, which receives public money for work on genetically modified plants. It would be all too easy for an organization opposed to genetic modification to say “You can’t trust those scientists. Look at them—they set up a body that supposedly provides unbiased information. And where do they get their money from? Monsanto—the company that started the whole business and is at the greatest risk from public opposition to genetic modification.”

Ethan Hack
University of Newcastle
Newcastle upon Tyne, United Kingdom

Dr. Hack raises an interesting argument, and this is a good opportunity to make a more general clarification of the goals of the Education Foundation. It is true that the foundation does receive some proportion of its support from various industries, and, for this reason, we are sensitive to any suggestion that we might in any way be guided in our efforts by the opinions of our donors. We believe the Education Foundation has an important role to play in the general education of the public about how plants work, how agriculture today operates to bring food and other agricultural products to the public, and how crops are developed by traditional means. The foundation also has an important role in providing information related to the ongoing debate over the use of genetically modified organisms. This role should be as an honest broker that presents all material in an objective manner with all sides of a debate covered and that provides an outlet for dialogue and educational materials that are based on sound science. Keeping these goals in mind, we believe the foundation can operate without conflict of interest.

Debby Delmer
President

Natasha Raikhel Appointed Plant Physiology Editor-in-Chief

The American Society of Plant Physiologists appointed Natasha V. Raikhel editor-in-chief of Plant Physiology at the annual meeting held in Baltimore last July. Her term will begin in May 2000. Natasha is currently University Distinguished Professor at the Michigan State University—Department of Energy Plant Research Laboratory and Department of Biochemistry at MSU in East Lansing. She has served on the Plant Physiology editorial board, as a member of the ASPP Publications and Executive Committees, and more recently on the Plant Cell editorial board.

Natasha’s primary research emphasis has been to elucidate the fundamental principles that govern protein trafficking through the secretory system and to the nucleus in plants, in particular to identify the various components involved in the specific sorting of soluble proteins to the vacuoles and to analyze the molecular mechanisms involved in protein trafficking to the plant nucleus. A few years ago, in collaboration with Ken Keegstra, Natasha initiated the study of cell wall biosynthesis in plants. Their research teams have isolated and cloned the gene encoding xyloglucan fucosyltransferase, as well as genes encoding several additional fucosyltransferases. They recently received a functional genomics grant from NSF (Natasha is principal investigator, Ken Keegstra and Jonathan Walton are coprincipal investigators) to identify and study other genes required for hemicellulose biosynthesis.

Natasha belongs to the American Society for Cell Biology and the International Society for Plant Molecular Biology, as well as to ASPP. She has published dozens of research articles since 1980 and has served on several editorial boards, including those of the Journal of Cell Biology, Current Opinion in Plant Cell Biology, and Trends in Plant Science. She has served on USDA, DOE, and NSF advisory panels. In 1996, she was awarded the Guggenheim Fellowship.

Natasha sought the top job at Plant Physiology because she likes working with a medium that disseminates science and within a system that “as a whole works only when people without a personal agenda contribute to it.” She assumes the editorship of the journal during exciting times, when progress in plant biology has been nothing short of phenomenal and a veritable explosion of new information and new research directions is emerging. Since its inception in 1926, the journal has been transformed from a small start into a major international medium for the publication of many types of scientific articles dealing with plant development and plant function. Natasha intends to continue the journal’s growth not only in terms of circulation but also in the expanse of its coverage: “I believe the journal should strive to become a journal of choice for attracting and publishing excellent papers in the broad field of plant biology, providing a forum for a wide variety of topics from the whole plant to biochemistry and physiology, and including molecular and cellular biology. I believe that it is extremely important for Plant Physiology to continue to recognize the importance of changes in the field as they occur, to be very flexible and to keep pace with innovations planned by up-and-coming new journals, and to attempt some innovations of its own,” she said.

Initiatives planned for the journal beginning in January include a new section entitled “Breakthrough Technologies.” These articles will report on the technological innovations that are accelerating the rate of progress in science. When she takes over in May, Natasha will broaden the editorial board to add editors in developing and emerging research areas, such as genomics and molecular evolution, while maintaining strength in the areas that during the past 10 years have come to be “traditional” areas of plant biology.

Natasha will succeed Maarten J. Chiraseels, who has led Plant Physiology since 1992. Under his leadership, the journal has evolved into a highly respected resource reflecting progressive modern science. Maarten has been instrumental in positioning the journal in the mainstream of the most rapidly moving multiple fronts of plant research.

Natasha V. Raikhel

Natasl1a Raikl1el Appointed Plant Physiology Editor-in-Chief
Biotechnology and Plant Stress Conference Set in Mexico

The National Institute for Research in Forestry Crops and Livestock (INIFAP) and the Mid-America International Agricultural Consortium (MIAC) recently held an international conference entitled “Biotechnology and the Response to Stress in Plants.” The conference was held in Monterrey Nuevo Leon, Mexico, from August 10 to 12, 1999, to assess the roles of biotechnology in addressing and improving the response of plants to drought, salt, disease, and nutrient stress. These serious agronomic problems exist on both sides of the border between the U.S. and Mexico. Thus, an important additional conference goal was to identify areas of cross-country collaboration.

The 13 plenary speakers (seven from various Mexican institutions and six from MIAC) presented papers in the areas of disease/pests, nutrients, and drought/salinity. The final session, led by Joe Polacco (University of Missouri), centered on the possibilities for future collaboration in plant biotechnology between MIAC and Mexican scientists. Rodrigo Aveldano, national director of the INIFAP Crop Research Program, outlined potential collaborative models.

MIAC is a 23-year-old association of the Universities of Missouri, Nebraska, Iowa State, Kansas State, and Oklahoma State. Its emphasis has always been on international linkages and during the past five years, it has focused on broad ties with Mexico. Plant biotechnology is one facet of those ties. The MIAC Plant Biotechnology Committee, under Joe Polacco, co-organized the conference with INIFAP, whose efforts were directed by Hector Cortinas (director of research at INIFAP’s Northeast Station). The meeting was sponsored by MIAC, INIFAP, and Fundacion Producce (an umbrella organization of Mexican producer groups) and received support from Pioneer Hi-Bred and the Missouri soybean growers. The Autonomous University of Nuevo Leon (UANL) hosted and participated in the program and provided excellent facilities. Conference participants met in the UANL Biblioteca Magna, the largest university library in Latin America.

About 200 scientists from throughout Mexico and a MIAC group of six traveling professors under the leadership of MIAC’s executive director, David Hansen, were in attendance. The opening ceremonies included high-level representation from national and state governments and UANL. The occasion was highlighted by a special signing ceremony of a memorandum of understanding between the National Coordination Office of Fundacion Producce, represented by Armando Paredes, and MIAC, represented by Robert Hudgens.

Conference support provided by the MIAC Mexican partners included simultaneous translation, continuous registration, all surface transportation, and a special reception and luncheon for the group. Registration materials included a conference briefcase and hard copy and CD-ROM versions of plenary papers. A display by various commercial biotech firms was maintained in the lobby throughout the conference. All participants received certificates signed by the UANL rector, INIFAP director, and MIAC executive director.

The conference generated much enthusiasm for joint activity, and many areas and models of collaboration were discussed. If these ties materialize, a subsequent conference will be held, perhaps in winter 2001 at a different location in Mexico, to encourage participation of additional groups and institutions. In addition to a continuation of the popular plant stress theme, the conference will feature progress reports on collaborative programs in the works.

From left: Joe Polacco (University of Missouri), Rodrigo Aveldano (national director, INIFAP Crop Research Program), and Luis J. Gólan-Wong (University of Nuevo Leon).

Please Note:
Plant Biology 2001 will be held one week earlier than originally scheduled. The meeting will take place in Providence, Rhode Island, from Saturday, July 21, through Wednesday, July 25, 2001.
The Council on Undergraduate Research (CUR) is proud to present its Eighth National Conference, entitled "CUR 2000: The Many Facets of Undergraduate Research," hosted by The College of Wooster in Wooster, Ohio, on June 22–24, 2000. The conference will bring faculty, administrators, and representatives from private foundations and federal agencies to the college. During the three-day conference, there will be a variety of plenary sessions, panel discussions, and workshops. Day-long programs for graduate students, new faculty, tenured faculty, and administrators are planned. The conference is designed for all those who are interested in undertaking or promoting undergraduate research and for faculty and administrators who want information on funding and grantsmanship. This is an ideal time and setting for networking. For more information, visit CUR’s Web site at www.cur.org and go to the meetings and events section. Also visit The College of Wooster’s Web site at www.wooster.edu/cur.

Previous ASPP member Dr. Richard M. Klein and his wife Dr. Deana T. Klein designated the ASPP Education Foundation as a beneficiary of their Deana Tarson Klein Revocable Trust.

Richard Klein was a distinguished member of ASPP for more than 40 years. For many years he was a professor in the Botany Department at the University of Vermont and previously was a research associate at the New York Botanical Gardens in Bronx Park. His participation and commitment to the activities and goals of ASPP are reflected in the initial designation from the trust to the ASPP Education Foundation in the amount of $100,000. This contribution represents the joint desires and accomplishments of both Richard and Deana.

The couple specified that there were to be no memorials of any kind. The opportunity this provides to the foundation to carry out its work will be a lasting tribute to the dedication of Richard and Deana Klein.

This contribution will make it possible to proceed with specific activities to increase public understanding of basic plant research and plant research using biotechnology. ASPP Education Foundation Board Chair Bob Goldberg will be working with board members, ASPP members, and advisers to direct the educational activities of the foundation.

Richard Klein died September 4, 1997, and Deana died April 26, 1999. Their accomplishments and generosity to ASPP will benefit plant science and the public for many years to come.
Senator Bond Wins 20 Percent Increase for NSF’s Plant Genome Research Program

Senator Christopher Bond (R-MO), chair of the Senate Appropriations Subcommittee on VA, HUD and Independent Agencies, led efforts to increase support for plant genome research by 20 percent (or $10 million) to $60 million in fiscal year 2000. This is the third consecutive year that Senator Bond has championed plant genome research. He authored the earlier NSF plant genome research provisions of $40 million in FY1998 and $50 million in FY1999.

Senator Bond's tremendous efforts have succeeded in gaining the support of the Congress and the administration for a cumulative total of $150 million in new dollars for NSF-sponsored plant genomic research over three years.

In addition to the $10 million increase for plant genome research, Senator Bond provided language in the Senate Committee report, which explains the relation of plant research to the NSF biocomplexity in the environment initiative. This language helps ensure that plant research will be a part of the biocomplexity research program. ASPP worked with Senator Bond's staff, who wrote the report.

An adopted House and Senate Conference Report provides NSF with a total budget of $3.91 billion. This amount represents an increase of $240 million, or 7 percent, over the FY1999 appropriation. For the Research and Related Activities account, the conferees have agreed to provide a total of $2.966 billion, nearly $200 million or 7 percent over the FY99 level. Major items within this account include the $60 million for the plant genome research program; $105 million for information technology research; $50 million for biocomplexity in the environment research; and $25 million to support arctic logistics.

For Education and Human Resources, the conferees agreed to provide $696.6 million, a $34.6 million increase over the FY1999 level. The Salaries and Expenses account is funded at the level of $149 million, and the Office of Inspector General is funded at the level of $5.45 million. Both levels are equal to the budget request.

House and Senate conferees determining funding for agencies and programs in the FY2000 VA, HUD and Independent Agencies (including NSF) Appropriations Act reached agreement with respect to NSF on October 7. The House approved the conference report on October 14 and sent it to the Senate. The Senate approved the conference report on October 15 and sent it to the president to be signed into law.

Senator Bond Delivers Strong Statement in Support of Plant Genomics Research and Biotechnology

Following are the draft remarks of Senator Christopher Bond (R-MO) on plant genomics and biotechnology for the September 23rd plant genome research reception held in the Senate Dirksen Building. The reception was attended by NSF plant genome research award recipients, congressional staff, officials from the Executive Branch, and others. ASPP president Deborah Delmer, past president Ken Keegstra, and executive committee member Vicki Chandler were among the ASPP members who attended. ASPP cosponsored the reception. Remarks of Senator Bond:

Together, we have been successful in building political support for the federal scientific effort to promote genomics research and plant science. Those in agriculture have always been at the forefront of promoting new technologies. As a cattleman told me, with hybrid breeding, sometimes you breed a greyhound to a pit bull, and you get a dog that won't run or fight. Biotechnology addresses this matter. The benefits of biotechnology are to farmers, but also to consumers, to the hungry, to the sick, to the environment, to our energy security, and to our economy.

For federal genomics research on the plant level, we provided $40 million the first year and $50 million last year. I have included $60 million in the bill that is currently on the floor.

You have made the case; I have provided the obstinacy and the gavel; and Congress has, consequently, provided the money that I hope to increase in the years ahead.

I am very grateful for the professionalism and the cooperation of the research community—both public and private—and the people at the National Science Foundation.

More important, I am grateful that you are endeavoring to solve human problems that until now seemed unsolvable. Regrettably, although you know that this technology will improve the lives of the world’s citizens, the world’s citizens do not know this.

Worse yet, the professional activist community and the luddites are spreading science fiction regarding biotechnology. The European leaders are engaged in an effort to regulate U.S. productivity. They are behind and trying to catch up. Further, lawbreakers are tearing up test plots not just in Europe, but here in the United States as well. That is against the law—even in California.

More disappointing yet, opportunistic corporations, such as Archer Daniels

continued on page 8
Midland Co. and Novartis, to placate the activists and protectionists, are undermining our scientists and our trade negotiators. ADM announced that grain should be segregated, and Greenpeace put out a press release applauding their support. Novartis develops, receives approval for, promotes, and sells technology to our farmers that its subsidiary refuses to buy.

Further, the U.S. Department of Agriculture, the Environmental Protection Agency, and the Food and Drug Administration are not defending publicly their findings that these products are safe. They are not supporting the rigorous and science-based approval process that they conduct. Professional regulators do the rigorous, costly, time-consuming, and duplicative analysis that is and that must be done to prove a product is safe. When some activists suggest that a product is not safe, that should draw a response—an aggressive response from the regulatory agencies.

The highest priority of these regulatory agencies is to ensure safe food without harm to the environment, and they have a tremendous record in this regard that deserves to be vigorously defended. We should hear as much from the EPA as we hear from Jeremy Rifkin. The USDA should be sending out strong signals of support for the products that are approved and not sending out the mixed signals that we have seen the European tabloids use against us.

Yes, there is a risk! A health risk and an environmental risk that politics, tabloid sensationalism, science fiction, and corporate opportunism will undermine the most promising technology of the next century. Many of us have heard more from the Washington Post editorial page than from the regulatory agencies. You are among the few and very special people who know the most about these issues. Regrettably, politics and corporate opportunism have placed an additional burden on you to become more active and challenge the science when it is not sound. Many of you have done so already, but we have a large-scale effort before us. This issue is too easy to sensationalize and too easy to demagogue for the activist community to lose interest. What you are trying to accomplish for people and for the environment is at stake if science does not prevail.

I am very proud of your accomplishments, your pursuits, your patience, your vision, and your support, and I welcome all suggestions as to how we can promote the triumph of science over politics. Keep up your critical work and thank you for this honor.

**ASPP Members Testify Before Senate Agriculture Committee on Plant Biotechnology Benefits to Farmers and Consumers**

In a hearing of the Senate Committee on Agriculture, Nutrition and Forestry held October 6, testimony on the benefits of research using biotechnology was presented by ASPP members Charles Arntzen, Roger Beachy, Ray Bressan, Bob Buchanan, Dean DellaPenna, Ralph Hardy, Brian Larkins, and John Ohbrogge.

Ralph Hardy, president of the National Agricultural Biotechnology Council, provided an overview of several issues that are pertinent to the public debate on modified foods.

"Genetic improvement of microorganisms, plants, and animals using molecular approaches that are variously identified as genetically engineered organisms, transgenic organisms or genetically modified organisms, or molecularly modified organisms has received and continues to receive extensive scientific examination regarding risks to the environment and to humans. These risks must be evaluated relative to those of existing products that they would replace. Genetically engineered crops are inherently less risky because of the ability to better ask and answer the important risk questions than for existing processes," Hardy said.

Charles Arntzen, president and CEO of the Boyce Thompson Institute for Plant Research and past ASPP Education Foundation board member, testified that there are a number of new plant products that are being created using recombinant DNA technology that will directly benefit human health here and particularly in the developing world. "The next generation of [biotechnology] products will increasingly have direct value-added benefits for food consumers as well as the indirect value of protecting the environment," Arntzen noted. His research using biotechnology is leading to plants engineered to be edible vaccines that would prevent illnesses deadly to millions of people.

Brian Larkins, of the University of Arizona and ASPP immediate past president, explained his research, which is leading to high-quality protein corn. He noted that enhanced corn in the diet could help prevent and reverse several human maladies.

"Typically, the protein in corn seeds contains around 2 percent lysine, while we require 5 percent lysine in our diet to avoid protein deficiency disorders. Globally, nearly 195 million children younger than five years..."
are undernourished for protein, and in 1992, some 12 million American children were thought to have diets that were significantly lower in protein than what is recommended by the National Academy of Sciences,” Larkins said.

Dr. Bob Buchanan, of the University of California, Berkeley, and an ASPP past president, said that his in vitro studies on thioredoxin using biotechnology have demonstrated that thioredoxin alleviates food and pollen allergies; enhances the digestibility and nutritional quality of foods; improves the baking quality of poor-quality flour; and disarms neurotoxins of snakes, scorpions, and bees. In addition to eliminating allergens from wheat food products in the lab, Buchanan has developed an animal model to provide the first allergy test for genetically modified foods.

Dr. John Ohlrogge, of Michigan State University, said that phase two of plant genetic engineering presents the opportunity to offer farmers new, high-value cash crops leading to increased revenues. Ohlrogge said his lab is working closely with industrial chemists to develop plants that produce new types of polyurethanes, nylon with stronger and more flexible fibers, and biodegradable lubricants.

Dr. Dean DellaPenna, of the University of Nevada at Reno, said that plant foods can, in theory, provide almost all the micronutrients essential for human nutrition; however, in practice, most plant foods (especially staple food crops) do not contain the full complement of vitamins or minerals in sufficiently concentrated amounts to meet the recommended daily allowance. He said research using plant genomics and biotechnology could lead to plants that would, in practice, provide humans with needed levels of micronutrients. These enhanced food plants would offer dramatic benefits for human health.

Roger Beachy, president of the Donald Danforth Plant Science Center, said that the vast majority of plant and agricultural scientists familiar with how crops have been developed through the years and the processes through which those foods have been evaluated are amazed by the response of people that seemingly do not want the technology to be adopted. He cited comparative risks in organic farming in which animal manure used to fertilize crops, unless properly composted, is a very real source of E. coli contamination of organically grown fruits and vegetables.

Senate Agriculture Committee Chair Richard Lugar (R-IN) said, “There has been an outcry against biotechnology in agricul-

continued on page 10
tured among some sectors of European society to the extent that the current approval process in the European Union has virtually ground to a halt." Lugar has been a strong supporter of the use of modern technologies such as biotechnology in agriculture.

Lugar, Ranking Democrat Tom Harkin of Iowa, Senator Thad Cochran (R-MS), Senator Bob Kerrey (D-NE), Senator Charles Grassley (R-IA), and Senator Peter Fitzgerald (R-IL) engaged the plant scientist witnesses with many questions and comments. Most of the senators appeared supportive of research using biotechnology. However, Kerrey expressed some disappointment with some market rejections of modified foods. He said that when he was in the restaurant business, if the customers did not order a particular menu item, he believed he was being sent a message that the particular rejected food item on the menu was "garbage" and should be taken off the menu.

Many representatives from the media, life science companies, producer and refiner groups, and others attended the hearing. The gathering of people was sizable enough to spill out of the hearing room and into an overflow room with internal televised coverage of the hearing.

The Senate Agriculture Committee held a follow-up hearing October 7 with representatives from USDA, EPA, FDA, Consumers Union, the National Academy of Sciences, and farm producer and refiner groups. Senator Lugar cited information presented October 6 by ASPP member scientists on several occasions throughout the day. The committee videotaped the October 6 hearing with testimony from eight ASPP member scientists for further use on this issue. The statements of the witnesses and chair at the October 6 hearing can be found at http://www.senate.gov/-agriculture/wit99106.htm.

The committee chair commented to the committee staff and to the people in attendance on the good preparation that the plant scientists' statements reflected.

The hearing provided an influential audience of policymakers and attending media with convincing examples of the value offered by research using modern transformation technologies. Members of the committee and attending media heard credible accounts on the comparable safety of food products developed with research using biotechnology. They also heard of the value-added foods and renewable energy sources that will be coming with the next generation of biotech products. Hearings like this provide important facts needed by supporters in the Congress to help fend off anti-biotech proposals that are not based in science. The testimony and responses to questions by ASPP members also cited the value of congressional support for basic plant research.

The contribution by ASPP members in this debate on modified foods before congressional committees on October 5 and 6 (see related story on page 11) occurred at a key time when some members of Congress were considering seeking new restrictions on biotech foods as a result of attempts by anti-biotech groups to scare the populace. By discussing research leading to value-added foods that could provide enhanced nutrition for consumers and increased revenues for farmers, the testimony provided many significant reasons for continued support of modified foods and research using biotechnology.
Thomashow, Cook Testify on Plant Genomics and Biotechnology at U.S. House Basic Research Subcommittee Hearing

A SPP members Dr. Michael Thomashow of Michigan State University and Dr. Jim Cook of Washington State University testified at a congressional hearing on “Plant Genome Science: From the Lab to the Field to Market, Part 2” on October 5.

The hearing was held by the House Science Subcommittee on Basic Research chaired by Congressman Nick Smith (R-MI). Smith is holding a series of hearings on plant genomic research supported by the National Science Foundation. Smith’s subcommittee has authorizing jurisdiction over NSF. Smith’s comments indicated his strong support for genomics research and for research using biotechnology.

Thomashow discussed a range of research efforts using biotechnology that will offer value-added benefits, including improved crop production, improved human health, and alternative non-food uses. He pointed out the value offered by research that leads to herbicide-resistant crops, crops with improved stress tolerance, food crops with increased vitamin and mineral content, and plants engineered to be edible vaccines for use against illnesses afflicting humans.

Cook pointed out that genetic modification of plants has occurred for many years. He remarked on the very impressive environmental safety record that is found in using plants as crops to produce food, fiber, and other products. Cook noted that genetic modification of crop plants can result in increased benefits for the environment. For example, herbicide-resistant crops can reduce the need for soil tillage by farmers. Cook added that there are effective performance trial and institutional review safeguards in place to help ensure the safety of genetically modified crops.

In the first round of hearings on plant genome research held August 3 by Smith’s subcommittee, ASPP past president Ken Keegstra of Michigan State University; ASPP member John Ryals, president and CEO of Paradigm Genetics; Mary Clutter, NSF assistant director; Eileen Kennedy, USDA deputy undersecretary for Research, Education and Economics; and Susanne Huttner of the University of California were the hearing witnesses. (See story in September/October issue of ASPP NEWS.)

FY2000 Funding Restored for NRI in Conference

Reductions in the fiscal year 2000 budget for the National Research Initiative Competitive Grants Program were averted in the House/Senate Conference Report for agriculture. The conference report provides $119.3 million for the NRI, including $41 million for plant research and $20.5 million for research related to natural resources and the environment. The FY1999 budget for the NRI was also $119.3 million. The Agricultural Research Service budget for FY2000 also received a boost in conference over Senate and House bill numbers with an appropriation of $834,322,000.

Going into conference, the picture looked much more bleak. The Senate had approved a bill calling for $114.1 million for the NRI, and the House bill provided $105.4 million for the NRI. Generally, the Senate and House bill recommended spending amounts would be expected to be the upper and lower budget number limits from which conference negotiators would determine a conference agreement figure. It is unusual for conferees to produce a budget number higher than that found either in the Senate or House version. The House has adopted the conference report, and further action is awaited in the Senate.

USDA officials acknowledged the efforts of ASPP members in seeking to avert NRI budget cuts this year. ASPP Campus Contacts and their colleagues in the states of conferees responded effectively by contacting their key members of Congress participating in the conference. Some research programs might have been eliminated within the NRI if either the original House or Senate budget numbers had been agreed to in conference.
Safe in the Ivory Tower?

I was stunned by the message! Yes, I had read that European field tests of genetically engineered plants by large multinational companies were being destroyed by protesters and that farmers’ fields in India containing genetically engineered crops were being burned to the ground. But now it had happened in my own backyard! I replayed the message on my answering machine. The disturbed voice of a student repeated that someone had entered fenced, university property where his experimental plants were growing and used machetes to cut his corn plants to the ground.

The perpetrators, or “decontaminators” as they referred to themselves, were either unaware or did not care that the plants they had destroyed were not genetically engineered. Although a small percentage of the plants at this university field station were genetically engineered, a part of a National Science Foundation–funded study, the plants that were destroyed had been created by classical breeding. They were an integral part of the graduate student’s doctoral thesis, and now his research would be delayed an entire year because of the destruction!

Can we as scientists continue to stand by and watch this happen? Can we let misunderstandings about modern plant biology and biotechnology go unchallenged, resulting in painful interruptions in the training of tomorrow’s scientists or stopping our own pursuits of fundamental scientific discovery?

Over the years, scientists have kept a low public profile, conducting their research within the confines of their laboratories in universities, publishing their research results, and rarely communicating with the general public about the implications of their work or its potential risks or rewards to society. Utilizing funding from federal grants was sufficient for most scientists to make a living and to train the next generation of scientists without having to justify or explain what they were doing to the public.

For decades, there was little to draw scientists out to engage in public discussions about their work. Biotechnology, I believe, is changing that situation. Few controversies in biology have caused this level of public debate. In the late 1980s to mid-1990s in the United States, we saw chefs refusing to serve genetically engineered foods in their restaurants, scientists parading in moon suits in fields containing genetically engineered organisms, and parents dumping milk from BGH-treated cows into the streets. During this period here in the United States, most scientists remained comfortably in their laboratories while these events played out. Those who chose to venture out into the public arena were often misquoted or misrepresented, only serving to drive them further into their “ivory towers.”

Do we have the luxury of continuing to stay cloistered within our laboratories? Of course, as scientists, we have a choice, but the consequences of that choice are clear. We can stay on the sidelines and hope that someone else takes on the responsibility of defending this discipline. The potential consequence of that choice might be that we lose our ability to engage in scientific discovery using the new genetic tools we helped to develop. Or, we can become actively involved, participating in dialogue with public opinion makers, consumers, and the press on the technology’s risks and benefits in an informed and professional manner. The choice is ours.

Deciding to do the latter is not a trivial commitment. Interacting with the public often requires more skills (and certainly different ones) than we, as scientists, use in our own research. Communicating effectively requires sensitivity to the audience, knowledge of the topic, and skill in sculpting answers that are scientifically accurate, lead to minimal misinterpretation, and address the concerns of the public. Deciding to become an active player in public dialogue requires a dedication to learning the skills necessary to do so effectively (see below).

If we, as scientists, recognize the importance of communicating with the public and make it a priority, I believe that we can make a difference in the debate. If we chose not to engage in this important exercise, we must accept the consequences of remaining in our ivory towers!

Peggy G. Lemaux
Department of Plant and Microbial Biology
University of California, Berkeley

Note from the ASPP Public Affairs Office

ASPP is taking an active role in helping scientists enter the dialogue taking place around genetically engineered plants. The ASPP Public Affairs Office and Committee on Public Affairs can provide background information for use in communicating with the media and the public on plant science issues, such as the relative benefits and risks of plant biotechnology. We can provide advice to ASPP members on procedures for getting a letter to the editor published or for arranging a meeting with an editorial board (see ASPP Public Affairs Web page at http://aspp.org/pubaff/editor.htm). For examples of the potential benefits and risks of plant biotechnology, see the issues section containing plant research briefing papers on the Public Affairs Web page (http://aspp.org/pubaff/issues.htm). For guidance in preparing a “listener friendly” talk on general issues related to agricultural biotechnology, see Peggy Lemaux’s Generic Talk and Slide Set on her Web site, which is linked to the ASPP homepage at http://aspp.org/pubaff/respbio.htm.

It is best to proceed with letters to the editor, interviews with the media, and meetings with editorial boards at which you provide the content of the presentation. You do not need to feel compelled to invite members of the “opposition,” because this is often more confusing to the audience than it is enlightening. If you want assistance in these ventures from the Committee on Public Affairs or the ASPP Public Affairs Office, please contact ASPP headquarters. Remember, if your local newspapers do not hear about the benefits of modern plant research you from, they may only hear one-sided accounts about the risks of the research you do from anti-biotech activists.

For a compelling reason to enter the fray, just look at what activists have done to the attitudes of the public toward genetic engineering in Europe. Activists have even demanded that GM-free clothing be made available in Britain (Nature Biotechnology 17, 939; 1999)! Imagine what this attitude could do in the United States to future support decisions for federal research money and your ability to use these tools in productive ways!

ASPP Book Program

ASPP welcomes proposals for its book program. Books typically published by the Society are edited, peer-reviewed works based on symposium proceedings and collections of mini-reviews. Topics include plant physiology, molecular biology, environmental biology, biochemistry, cell biology, biophysics of plants, regulation of gene expression, molecular and genetic basis of plant development, plant-microbe interactions, and molecular aspects of plant cell organization and function. Books must be timely and focused on a single topic. Proposals must demonstrate scholarship, good writing, and the potential to fill an existing need in the field.

To obtain more information on publishing books with ASPP, contact the Publications Director at 15501 Monona Drive, Rockville, MD 20855-2768 USA or e-mail nancyw@aspp.org.
DOE Division of Energy Biosciences Budget Up More Than 3 Percent for FY2000

The conference report for fiscal year 2000 spending for the Department of Energy provides an increase of 3.3 percent for the DOE Division of Energy Biosciences. The Division of Energy Biosciences, which supports basic plant and microbial research, will receive $31 million in FY2000 under the conference report. The report has been enacted into Public Law 106-60.

The Division of Energy Biosciences is within DOE Basic Energy Sciences. Overall, the Basic Energy Sciences budget is down compared to the FY1999 budget.

Support by ASPP Campus Contacts for the Division of Energy Biosciences contributed to the 3.3 percent increase.

Lengthy Review Expected by EU of Refused U.S. Modified Food Exports

Jim Siedow of Duke University represented ASPP at the program “Genetically Modified Crops: International Implications” held at the German Embassy in Washington, DC, on September 13. ASPP cooperated in sponsoring the program with the Institute of Food Technologists, which was the primary sponsor, and with the American Phytopathological Society, American Society of Agronomy, and Crop Science Society of America.

The program featured comments by Gerhard Gloey, the German Embassy counselor for agriculture; Tassos Haniotis, a representative of the European Commission, Agricultural Sector; Sara Schwartz, of the USDA Foreign Agricultural Service; Sharon Bonier-Lauritsen, of the U.S. Trade Representative’s Office; and Tom Billy, of the Codex Alimentarius Commission.

The program offered scientists and principal parties involved in trade negotiations affecting exports of modified foods from the United States to European nations the opportunity to hear each other's views and to present their positions on this trade issue. Apparently, the European Union is involved in a very lengthy and multifaceted review of the issue of accepting U.S. agricultural exports that have been modified using biotechnology that could keep U.S. agricultural products out of European markets for many years.

Siedow is the new chair of the Committee on Public Affairs as of October 1. He has served on the committee since October 1995. He commended past chair Lou Sherman of Purdue University for his strong contribution to the committee's and the Society's many major accomplishments in supporting basic plant research.

Plant Scientists to Speak at NIH Conference December 5–7

Several scientists conducting research on plants and yeast will be speakers at a conference on “Advances in Membrane Transport: Lessons from Model Organisms” to be held December 5 through 7. The conference is sponsored by the National Institute of Diabetes and Digestive and Kidney Diseases of the National Institutes of Health. It will be held on the NIH campus in Bethesda, Maryland.

Plant and yeast speakers include Joe Ecker, Michael Palme, Michael Sussman, David Eide, Wolf Frommer, and Bruno Andre. ASPP member Julian Schroeder is on the organizing committee for the conference. He said the increased number of speakers working with plants is an indication of increased interest on the part of the institute in plant research. Schroeder said there is considerable interest in innovative approaches to study membrane transport developed in Arabidopsis and yeast studies. Membrane transporters are studied in relation to nutritional disorders and kidney disease in humans.

Questions concerning the workshop should be directed to ComputerCraft Corp.; telephone (301) 493-9674, fax (301) 530-0634, e-mail chun@computer-craft-usa.com, Web: www.ep.niddk.nih.gov.

Scientists Participate in CNN Online Discussion of Modified Foods

A number of supportive comments on research using biotechnology have been registered as part of a CNN online discussion on modified foods. ASPP Campus Contacts were alerted October 7 of an online CNN message board inviting the public to participate in the discussion.

The CNN description of the issue was very one-sided and appeared to be designed to generate a public response that would be in opposition to modified foods. The ASPP alert of the online discussion noted that the Monarch butterfly study paper discussed by CNN was actually rejected for publication by Science and Nature, according to congressional testimony by a reviewer, but did eventually get published in Nature as a news brief item. Scientists who have reviewed the Monarch butterfly study have noted that it does not reflect field conditions.

Videos & More for Plant Physiology, THE PLANT CELL Online

ASPP is pleased to announce that Plant Physiology and THE PLANT CELL will now review material to be published only in the online version of the journals. Authors are invited to submit videos, large data sets, tables, and other materials that are relevant to their articles and that would be better represented online than in print. If you have any questions, please visit our Web sites at http://aspp.org/pp/ plphycau.ht ml (Plant Physiology) and http://www.plantcell.org/misc/ ifora.shtml (THE PLANT CELL).
The long-awaited second edition of Plant Physiology by Lincoln Taiz and Eduardo Zeiger was available for classroom use early in the fall of 1998. Plant Physiology represents the efforts of 21 contributors, each being an expert in his or her field, and thus each chapter is a mini-review. The organization of the second edition is similar to the first. The book is divided into three main sections: Transport and Translocation of Water and Solutes, Biochemistry and Metabolism, and Growth and Development. This new edition contains brand new chapters on cell walls; gene expression and signal transduction; growth, development, and differentiation; and blue light responses. The organization closely follows the course that I present to advanced undergraduate/first-year graduate students in plant physiology. The approach is clearly based on connecting fundamental principles of plant physiology to recent developments in plant cell biology and plant molecular biology.

The section on water relations focuses more on experiments and quantitative relationships than it did in the first edition and is in some ways similar to the presentation in Park Nobel’s Physiochemical and Environmental Plant Physiology. The chapter on water balance would be more valuable to students if the basic information on stomatal opening and closure was included rather than being scattered across three other chapters.

The section on solute transport has been greatly enlarged and contains much new information on the molecular nature of carriers, channels, and pumps, including aquaporins. The use of molecular analysis to identify and elucidate membrane protein structure is amply described. Organizationally, it might have been more appropriate to have the chapters on energy transformations—photosynthesis and respiration—precede the chapter on solute transport so that students are familiar with how ATP is both generated and utilized before topics such as active transport are discussed.

Many new details have been added to the unit on biochemistry and metabolism. These include the characterization of the FgP1-ATP synthase as a “molecular motor;” the molecular structure of photosynthetic pigment complexes and reaction centers, a molecular description of alternate oxidase, and the role of Nod factors in rhizobial symbioses. The chapters are rich in the hows and whys, but I would have preferred more information on the use of inhibitors and ionophores as probes of electron transport and oxidative- and photophosphorylation, for example. In addition, more information on the current understanding of both sulfur and phosphate metabolism in higher plants would be helpful.

The new chapter on gene expression and signal transduction in the unit on Growth and Development is excellent and extremely helpful to students who have not had a formal course in cell biology. The treatment of the material dealing with regulation of gene expression, hormone receptors, secondary messengers, and components of signal transduction pathways compares quite favorably with the presentation in Albert’s Essential Cell Biology. The chapters on phytochrome and phytohormones in this unit contain much new information that is based on the use of Arabidopsis mutants and molecular cloning techniques to elucidate the role of hormones and their receptors in the regulation of gene expression during growth and development.

As might be expected with a textbook in which each chapter is a mini-review focused on a narrow area, one finds in some cases too much detail on certain topics and in others too little. Overall, my students found the second edition to be quite valuable compared to the previous edition. That was true, in particular, with regard to the newer information derived from experiments in molecular cell biology. In many cases, the references cited from the primary literature are from the past year or two. My students were disappointed, though, by the absence of useful Web sites for each chapter, a feature that is becoming more common in introductory biology textbooks. The Web site maintained by Sinauer Associates, the publisher, does not contain any useful information that supplements the text for either the instructor or the student. The publisher does supply an artwork CD-ROM that contains all the photographs and fine line art work.
NEW ANNUAL MEETING FORMAT!

CALL FOR ABSTRACTS

Submit your abstract for Plant Biology 2000 via the World Wide Web. (Abstracts will also be accepted by physical mail. Faxed abstracts will not be accepted.)

All abstracts submitted for Plant Biology 2000 will be accessible for browsing and searching on the World Wide Web beginning in April 2000.

The program format for the 2000 annual meeting will include five major symposia, 18 minisymposia selected primarily from the submitted poster abstracts, and poster presentations (no oral presentations). All posters will be on display for four days. Authors should submit their abstracts in one of the 27 poster categories. The program committee will also use these abstracts as a basis for composing the 18 minisymposia. Potential minisymposium topics are listed on page 3 of the call for abstracts. Suggestions or proposals for any additional minisymposium topics should be sent to Susan Chambers, chambers@aspp.org or Plant Biology 2000, 15501 Monona Dr., Rockville, MD 20855 USA.

IMPORTANT NOTICE

To be able to submit and view abstracts on the World Wide Web, instructions for authors have been significantly changed from previous years. It is essential to read and follow carefully the enclosed new instructions for submitting abstracts to Plant Biology '99. The new system will work best for abstracts submitted via the World Wide Web. All authors who have the electronic capability to submit via the Web are urgently requested to do so.

Deadline for Receipt of Abstracts
WEDNESDAY, MARCH 1, 2000.
Do not submit before Monday, February 1, 2000.
CALL FOR ABSTRACTS

PLANT BIOLOGY 2000:

2000 Annual Meeting of the American Society of Plant Physiologists

Saturday, July 15–Wednesday, July 19, San Diego, CA, USA

Deadline: Wednesday, March 1, 2000
Do not submit abstracts before February 1, 2000.

PLEASE READ THE FOLLOWING CAREFULLY BEFORE SUBMITTING ABSTRACTS FOR PLANT BIOLOGY 2000

Abstracts to Be Submitted and Viewed Electronically for Plant Biology 2000

For Plant Biology 2000, abstracts should be submitted via the World Wide Web, and the annual abstract supplement will be available for viewing and searching on the Web beginning in April 2000. We will also publish a printed version of the abstract supplement in 2000 which will be available to attendees at the meeting.

Abstracts will be available for viewing and program details will be attached to the abstracts, making it possible for you to plan your visit to the annual meeting with precision long before you get to the meeting. The Web site will make it possible for you to prepare and print out a personal program to guide you at the meeting.

The deadline for submission is Wednesday, March 1, 2000. Abstracts may not be submitted before Wednesday, February 1, 2000.

This system will work best for members who have access to the World Wide Web through a forms-capable Web browser. We strongly recommend Netscape or MS Internet Explorer, version 3.0 or higher. We will include links at the site to immediately download the latest version of these two browsers. We strongly urge all members who are able to do so to use this method of submission. The more abstracts that are received via the Web, the better the electronic abstract supplement will work.

In recognition that not all members have access to the Web or to the proper browsing software, abstracts may also be submitted via physical mail. Although this alternate method of submission will work, it is cumbersome and expensive to convert to the Web file. Again, we urgently request everyone who has World Wide Web capability to use that format to submit his or her abstract.

For all abstract submissions, authors will be strictly limited to 1800 characters in the body of the abstract. Automatic acknowledgments will be sent to all who submit, regardless of the method they use.

Inside this insert are the new instructions for submitting your abstracts electronically (or by regular mail if you don’t have access to the Web). For this electronic submission project to work effectively, it is critical that you read and follow these new instructions carefully when you send your abstracts for Plant Biology 2000. If you have any questions, contact Susan Chambers at chambers@aspp.org or 301-251-0560, ext. 111.

Remember the following four guidelines:

- Limit the body of your abstract to 1800 characters.
- Do not submit any abstracts before February 1, 2000.
- Do be sure to submit by Wednesday, March 1, 2000.
- Do not use fax.
- Most important:
  
  IF AT ALL POSSIBLE, SUBMIT BY WORLD WIDE WEB.

FOLLOW THE ENCLOSED INSTRUCTIONS EXACTLY.
Call for Abstracts—Plant Biology 2000
2000 ASPP Annual Meeting
San Diego, CA, USA, Saturday, July 15–Wednesday, July 19

HOW TO SUBMIT AN ABSTRACT TO PLANT BIOLOGY 2000
We urge all who have the electronic capability to use the World Wide Web.

I. Via the World Wide Web
1. Select a poster presentation report category from the list below. A member may submit or sponsor one research poster abstract and one Education poster abstract.
2. A member may request that an abstract also be considered for a selected minisymposium category (optional).
3. Deadline for receipt is Wednesday, March 1, 2000. DO NOT USE FAX.
4. DO NOT include any graphics or tabular material in the body of your abstract.
5. Access http://aspp.org/abstract. You must have a forms-capable browser (for example, Netscape 3.0 or above or Internet Explorer).
6. Detailed instructions will be provided on the screen. Enter the information called for in each field. If you use special characters (super- or subscripts, italics, bold or Greek letters), you will be asked to enter some simple text mark up codes. The codes will be provided in the instructions on screen. Those with Internet browsers 3.0 or higher have more automated functions for inserting the characters. The system will provide an immediate proofing copy to ascertain that you have entered the codes properly. The system will count the characters (minus the codes) and will not permit you to enter an abstract of more than 1800 characters.
7. After proofing, press the "Submit" button. Acknowledgment will be sent to you by e-mail.

II. Via Physical Mail
1. Select a poster presentation report category from the list below. A member may submit or sponsor one research poster abstract and one Education poster abstract.
2. A member may request that an abstract also be considered for a selected minisymposium category (optional).
3. Deadline for receipt is Wednesday, March 1, 2000. DO NOT USE FAX.
4. DO NOT include any graphics or tabular material in the body of your abstract.
5. Use this method of submission only if you do not have access to the World Wide Web.
6. Fill in the form on the following page exactly as it is shown and within the space provided.
7. Type the abstract in the area provided; DO NOT exceed 1800 characters. A proofing copy and acknowledgment will be e-mailed to you if you do not have or do not provide an e-mail address, the proofing copy will be sent by fax.
8. Mail two flat, unfolded copies (original and photocopy) of your abstract to Plant Biology 2000 Abstracts, 15501 Monona Drive, Rockville, MD 20855-2768 USA.

The meeting format for Plant Biology 2000 will include poster presentations and minisymposia. All abstracts must be submitted as poster presentations in one of the following 27 poster session categories. The program committee will then review the poster abstract submissions and select a limited number of abstracts to compose up to 18 minisymposia. If you wish to have your abstract considered for a minisymposium presentation, please select a potential minisymposium topic in which it would best fit. If your abstract is chosen by the program committee for a minisymposium presentation, you will be contacted before April 1, 2000.

POSTER PRESENTATION REPORT CATEGORIES
Abstracts for poster presentations (no orals) may be submitted in any of the following 27 categories.

Inter cellular Signaling
Intra cellular Signaling
Reproductive Biology
Vegetative Development
Seed Biology
Cytoskeleton
Lipids and Related Molecules
Organelle Biogenesis
Root Biology
Secondary Metabolism
Cell Walls
Water Stress
Elevated CO2
Abiotic Stress

Resource Allocation
Tropisms
Oxidative Stress
Photomorphogenesis
Enzymology and Metabolism
Genomics
Growth Regulators and Hormones
Membrane Transport
Photosynthesis and Respiration
Plant Interaction with Other Organisms
Regulation of Gene Expression
Education
Societal Issues

Potential Minisymposium Topics:

- Plant Interaction with Pathogens
- Plant Interaction with Symbionts
- Plant Interaction with Other Plants
- Enzymology
- Bioenergetics in Photosynthesis
- Resource Allocation: Mechanism & Control
- Molecular Motors
- Membrane Transporters
- Sugar Signal Transduction
- Guard Cell Signal Transduction
- Hormone Receptors and Signaling
- Long Distance Signal Transduction
- Cell to Cell Signal Transduction
- Lipid Biology
- Algal Physiology
- Targeting
- Vegetative Plant Development
- Reproductive Development
- Genome Structure
- Functional Genomics
- Genomic Tools (bioinformatics, arrays, proteomics)
- Seed Biology
- Silencing
- Cell Walls
- Programmed Cell Death
- Vascular System Biology
- Post-translational Control of Metabolism
- Physiological Ecology
- Abiotic Stress
- Nutraceuticals
- Societal Issues in GMOs

Address any questions to Susan Chambers, chambers@aspp.org or 301-251-0560, ext. 111.

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PLANT BIOLOGY 2000 BY PHYSICAL MAIL
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Please submit via physical mail ONLY if you lack the electronic capability to submit via the Web)

ABSTRACT TITLE (Type in sentence style: capitalize first letter of first word only; type all other words except proper names in lower case letters):

AUTHOR: AFFILIATION:
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POSTER PRESENTATION REPORT CATEGORY (select from list at the bottom of page 3 of the call for abstracts):

MINISYMPOSIUM TOPIC (if you would like the program committee to consider your abstract for a minisymposium, select from the minisymposium topics list on page 3 of the call for abstracts):

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ASPP Member: [ ] Yes [ ] No Other Plant Physiology Society Membership:

BODY OF ABSTRACT: (Abstract must fit into space below, and it must not exceed 1800 characters. Present all elements of a research report [introduction, materials and methods, results, discussion] but without headings. End abstract with acknowledgment of funding sources, if applicable. Do not indent first line of abstract. DO NOT break copy into paragraphs. DO NOT include graphics or any tabular material. Super- and subscripts, bold, and italics may be used. Abstracts submitted by physical mail will be retyped to be put into the electronic file that will appear on the Web and be used for printing the abstract supplement. Mail two flat, unfolded copies of this abstract (this form and a photocopy) to Plant Biology 2000 Abstracts, 15501 Monona Drive, Rockville, MD 20855-2768 USA.)
Raskin Named Finalist in World Technology Awards for Biotechnology

ASPP member Ilya Raskin, a professor of plant science at Rutgers' Biotechnology Center for Agriculture and the Environment (Biotech Center), has been named one of five finalists for the 2000 World Technology Awards for Biotechnology. Raskin was cited for his work in developing novel molecular farming techniques for drug discovery and manufacturing. Other finalists include Ian Wilmut of the Roslin Institute, creator of Dolly, the cloned sheep; John Sulston of the Sanger Centre in England, who is working on the Human Genome Project; Craig Venter, president of Celera Genomics in Rockville, Maryland, also working on sequencing the human genome; and Peter Stadler, Christiane Nüsslein-Volhard, and Klaus Rajewsky of Artemis Pharmaceuticals GmbH in Cologne, Germany, who are conducting genetic, genomic, and bioinformatic analyses in vertebrate and model organisms.

The awards, presented in association with The Economist magazine of London, have been created to honor those individual leaders from around the globe who have contributed the most to advancing emerging technologies for the benefit of business and society and whose work today will have the greatest impact on the future in both expected and unexpected ways. "As a major research university, Rutgers strives to attract scientists, such as Ilya Raskin, who are doing cutting-edge work," said Rutgers president, Francis L. Lawrence. "This richly deserved honor recognizes his outstanding scientific contributions and places him in truly distinguished company."

"Ilya has that rare ability to integrate fundamental research with practical applications," said Peter Day, director of the Biotech Center. "We are proud and delighted that his contributions are being recognized in this way."

The research that caught the attention of the awards committee was Raskin's development of a unique process for the discovery and manufacture of valuable natural products, including pharmaceuticals, nutraceuticals, biopesticides, preservatives, cosmetics, flavors, pigments, and fragrances. His novel, cost-effective, and environmentally safe technique uses certain chemical elicitors as triggers to produce mixtures of biologically active compounds from plants. This work is funded by Phytomedics, a start-up biomedical company founded by Raskin and currently licensing Rutgers technology. Raskin's methods substantially improve on current methods for production, detection, and isolation of novel natural product candidates from plants by harvesting biologically active molecules from the places where they accumulate. By adding controlled stimulation protocols, Raskin is also able to enhance the content and diversity of these molecules. In collaboration with Phytomedics, Raskin's group has also developed a system for continuous, low-cost production of pharmaceutical proteins in plants.

Raskin is internationally renowned for his work on salicylic acid as a signal in plant thermogenesis and disease resistance, as well as for his ongoing role in the development of phytoremediation (the use of plants to extract contaminants from soil and water). It is for this work, now widely duplicated in labs around the world, that he was recognized in 1997 as a finalist in the Discover Awards for Technological Innovation. He was also the 1993 recipient of the Charles Albert Shull Award, presented every two years by ASPP to recognize the most prominent and active young botanical scientist in North America.

The winners of the World Technology Awards were announced on November 12 in London at the National Museum of Science and Industry. All finalists will have their case studies and select artifacts of their choosing presented to the museum to become part of the permanent collection. They and the competition judges will also be inducted as the latest fellows/members in the World Technology Network.

The awards presentation was available live online at the World Technology Awards Web site. Case studies and profiles of the finalists are also available on the site. In addition to biotechnology, awards were presented in 19 other categories, including information technology hardware, information technology software, communications technology, space, materials, energy, law, policy, start-up companies, design, the arts, media and journalism, finance, commerce, marketing, health and medicine, transportation, the environment, and ethics.

Emmanuel Epstein Receives Award of Distinction

ASPP member Emmanuel Epstein is one of 12 Award of Distinction recipients honored at the University of California at Davis by the College of Agricultural and Environmental Sciences on October 15, 1999. The Award of Distinction is the highest recognition presented by the college to individuals whose contributions and achievements enrich the image and reputation of the college and enhance its ability to provide public service.

Epstein received his bachelor of science and master of science degrees in pomology at the University of California at Davis and joined the school's faculty as a lecturer in plant nutrition in 1958. He received the Cherubim Gold Medal and twice was awarded the Senior Fulbright Research Scholarship. He is a member of the National Academy of Sciences.

A professor emeritus in the UC Davis Department of Land, Air and Water Resources, Epstein is an internationally recognized scientist. He reopened the field of essential elements with his work on the role of silicon in plant systems. He lectures worldwide, speaks at national and international meetings, and is considered to be one of the pioneers in ion transport research in plants. He has been a key figure in research on salt tolerance and its application in agriculture.

Dr. Epstein received the award at College Celebration, an annual fall event at the university. The theme of this 11th College Celebration was "A Bountiful Harvest."
ASPP Member Camellia Okpodu Recounts for Oprah Keys to Her Success

Camellia Okpodu, an ASPP member since 1990, appeared on the July 12th edition of the popular television show Oprah, which was dedicated to how parents can encourage girls to become successful women. Dr. Okpodu is an assistant professor of plant molecular biology at Hampton University, Hampton, Virginia. She earned both her bachelor's degree and Ph.D. in botany/plant physiology at North Carolina State University.

Dr. Okpodu came across the solicitation for guests to appear on Oprah during a search on the Internet for a book that had been recommended by Oprah's Book Club. A query popped up asking people to tell talk-show host Oprah Winfrey about their mothers. Okpodu's essay led to a call from Winfrey's staff (which Okpodu at first thought was a joke) and ultimately an appearance on the July 12th Oprah. Winfrey's featured guest that day was Dr. Sylvia Rimm, author of a new book entitled See Jane Win: The Rimm Report on How 1,000 Girls Became Successful Women.

Rimm studied 1,000 girls over a period of several years to determine what makes women successful. She summarized her findings into six key elements:

- Teach healthy competition (teach girls not just the excitement of winning but resilience and perseverance when they lose).
- Teach girls how to feel smart.
- Encourage math. Math is an important threshold subject that opens up opportunities in many other fields.
- De-emphasize appearance and popularity.
- Be a coach, not a judge.
- Parents: Fulfill your own dreams.

Dr. Okpodu was especially able to relate to the second point. A "very reserved" child, she liked to be by herself. She recalls being picked on a lot, and books became her way out. She learned to read at age 3, and because of that her mother would tell her she was special. "That made me feel incredible and invincible." Today the mother of three girls, Okpodu says that because her mother believed in her, she believed in herself.

For years, Okpodu's mother worked two jobs to send Okpodu and her four siblings to college. A few years later, when Okpodu told her mother she was thinking of pursuing her Ph.D., her mother asked simply: Why not?—"not realizing that [her daughter] would be one of the first African American women to receive a Ph.D. in plant physiology and biochemistry from N.C. State," Okpodu added.

How did Okpodu develop her interest in plants? "I grew up on a farm. I was always growing things. But any child interested in biology is steered to medicine." So, when she went to N.C. State, she got on the premed pathway. But early on, she decided she didn't like the sight of blood. She did like biochemistry, though, and decided as an undergrad to take a graduate-level biochemistry course.

That's how she met fellow ASPP member Wendy Boss, who among others encouraged her fledgling interest in plant biochemistry.

Okpodu urges her colleagues in plant science to make greater efforts at public outreach. "Part of the problem of minorities being underrepresented in the plant sciences is a P.R. problem. Medicine is glamorized. But when people think of plant science, they think of agriculture. And for some minorities, the historical association with agriculture is negative. What would help is more community-level efforts to get the discipline out there...especially to minorities."

The schools need to refocus their priorities, too. "Schools are too outcome-based, too grade-oriented. The way they assess kids is ridiculous. The important thing is to expose children as much as possible to subjects like math." In fact, this final point figures prominently in Camellia's own set of key elements for spurring young girls on—"Encourage girls to pursue math and science. Don't emphasize grades so much as broad exposure to these important fields."

"Encourage girls to pursue math and science. Don't emphasize grades so much as broad exposure to these important fields." What else? "Set expectations for your daughters. Tell daughters that they are college material; ask them early on what college they want to attend. Make sure your daughters believe they're smart; brag about them. Encourage them to participate in team sports to emphasize collective work."

Does Okpodu have advice for the Society in its efforts to increase minority participation in plant biology and to encourage young children to consider careers in the field? Absolutely. "ASPP is an elite organization. Most people have no idea it exists. It perpetuates science among scientists, but if we don't tell the public what we're doing, someday we won't even have a discipline."

Okpodu sees an opportunity for the Society to do more with organizations like Archer Daniels Midland and Monsanto to spread the word about plant biology. She pointed to the American Society for Microbiology poster, too, which highlights when minority groups entered the field of microbiology.

What does Okpodu hope for her own daughters? "I tell them that they must build a strong foundation on the cornerstone of mathematics to become a success. I urge them to use their own yardstick to measure their success, not their neighbor's yardstick—they'll never know when their neighbor's yardstick is in inches when theirs is in feet. And finally, I tell them that failure is just another opportunity to learn."

Trewavas Elected to Royal Society of Great Britain

A SP member Anthony Trewavas was recently elected into the Royal Society of Great Britain for his groundbreaking research on how plant growth substances work and his identification of developmental "windows" during which specific cells are sensitive to growth regulators. Trewavas pioneered the use of aequorin and other intracellular probes as in vivo reporters, allowing detailed real-time studies of fluctuations in cytoplasmic calcium concentrations in response to diverse signals. He has also made seminal contributions to our knowledge of calcium-dependent protein kinases.

Trewavas is a professor at the Institute of Cell and Molecular Biology, University of Edinburgh. He received the ASPP Corresponding Membership Award in 1999.
As we approach the next millenium, the place of the United States in the global community will be determined greatly by the quality and diversity of its workforce. At the session on Maintaining Diversity in Plant Physiology at the 1999 ASPP annual meeting in Baltimore, panelists discussed the challenges involved not only in recruiting but also in retaining underrepresented students of African, Latino, and Native American descent.

The Worcester Polytechnic Institute (WPI; Worcester, MA) has successfully met the challenges. Since 1993, WPI has increased the entering pool of these underrepresented students by about 10 percent annually to the current level of 4.8 percent. About half of the entering students achieved SAT scores above 1200 and were ranked in the top 20 percent of their high school graduating class. The retention rate for these students has also risen over the past few years. For the class of 1997, 67 percent returned for their sophomore year; for the class of 1998, that number was 74 percent; for the class of 1999, 97 percent; for the class of 2000, 100 percent; for the class of 2001, 89 percent; and for the class of 2002, 91 percent. The overall retention rate at WPI is 91 percent.

The real key to success is the graduation rate of students. For the 1997 class of underrepresented students, 60 percent graduated in five years, the class of 1998 graduated 64 percent in four years, and the class of 1999 graduated 55 percent in four years. Compared to the overall rate of WPI student graduation of 52 percent in four years, graduation of underrepresented students is on a par with the rest of the student body.

How has WPI, a small science and engineering university, achieved these results? In 1990, with funding from United Technologies Corp., WPI established the Minority Affairs and Outreach Programs Office (MAO) and initiated the summer Strive program. MAO coordinates two main programs aimed at recruiting and retaining underrepresented students: Strive and the Extracurriculum Academic Development Program (EMSEP).

Strive is a two-week intensive summer outreach program for high school students of color with superior academic ability and interest in math and science. Besides Strive, MAO has expanded recruiting nationwide. MAO has participated in SERO/NSSPNS college information sessions in more than 10 major metropolitan cities. It has expanded recruitment to Puerto Rico and developed relationships with several pre-engineering programs nationwide.

In 1993, EMSEP was formed along with the Marshall/Chavez/Means Scholarship. EMSEP is a comprehensive support service network designed to help traditionally underrepresented populations succeed in college. EMSEP empowers students to take an active role in their education by helping them establish a solid foundation in their academic and personal development. EMSEP has been so successful that in 1995, the National Academic Advising Association recognized it for “Outstanding Institutional Advising.”

There are three main components to EMSEP: a Summer Bridge Program, a Network of Support Services, and the Academic Development Plan. The Summer Bridge Program is a two-week residential orientation program during August, prior to start of classes. Its purpose is to assist in the transition from high school to college through a series of interactive sessions with faculty and staff. There are also academic enrichment courses in physics, math, writing, and literature, as well as instruction in basic and advanced computer skills. Seminars are provided to enhance and improve study skills, and discussions are held to help clarify issues surrounding personal growth and development. Students also participate in leadership training and social activities while interacting with upperclass students.

The Network of Support Services includes academic advising, personal counseling, financial aid planning and assistance, faculty advising, peer tutoring, academic skills workshops, mentoring, and career planning. Students are encouraged to develop a personal network of resources that include faculty and staff from many areas and groups on campus.

Academic Development Plans are developed for those students who experience academic difficulty. This intensive intervention program is individualized to focus on diagnosed problems and to provide effective solutions through increased contact with professors and advisers, attendance at a five-week college success workshop, and participation in study-skills development programs.

Overall, the reason for WPI’s success in recruiting, retaining, and graduating underrepresented students can be summed up as follows:

- extensive outreach efforts
- intensive pre-entry orientation
- strong mentoring by faculty and staff
- good professional and career development linkages.

EMSEP in particular has been key to the success of those students who graduate. This effort has been well supported with funds not only from numerous foundations but also from corporations who view support of EMSEP and Strive as an investment in their corporate future. For more information about the WPI programs, visit the MAO Web site at www.wpi.edu/Admin/MAO or contact Ms. Dawn R. Johnson, Director, Minority Affairs and Outreach Programs, e-mail drj@wpi.edu or telephone 508-831-5796.

Pam Weathers
Professor, Biology and Biotechnology
Dawn Johnson
Director, Minority Affairs and Outreach
Worcester Polytechnic Institute
Worcester, MA

Can You Help Us Locate—
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Pedro M. Aparicio-Tejo
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Wenlian Deng
Zhaoao Deng
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Tamara L. Jones
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Ekaterina Revenkova
Yoon Ahee
Lucinda S. Smith
Norbert Sprenger
Mark Stitt
David Wendehenne
Maria Eugenia Zanetti
Sergiy Zhu

If you have an updated address for any of these people, please e-mail Kelley Noone, member services coordinator, at knoone@aspp.org.
When Paul Saltman died of prostate cancer on August 27 at age 71, we lost a dear colleague whose dedication, empathy, academic accomplishments, and vision were cherished far beyond his campus at the University of California San Diego (UCSD), an institution he served with devotion and distinction for 32 years.

Paul began his academic career at Caltech, where he received a bachelor's degree in chemistry in 1949 and a doctorate in biochemistry in 1953. His Ph.D. research was conducted in the Biology Department under the direction of Professor James Bonner and in the happy ambiance of Bernard (Barney) Axelrod, a visiting postdoctoral fellow. Accordingly, Paul joined ASPP and remained a member for more than 40 years.

In between his bachelor's degree and his Ph.D. studies, Paul undertook a postgraduate scholarship in Paris—upon the recommendation of Nobelist Irene Joliot-Curie—that entailed steeping himself in phosphate metabolism in the laboratory of Professor Jean Roche. (Paris also served as the setting for a storybook honeymoon and offered Paul the chance to play basketball for the Racing Club of France.) His Ph.D. dissertation and a subsequent publication unequivocally established the role of hexokinase in higher plant glycolysis and characterized soluble and particulate forms of the enzyme in wheat germ and other plant materials. Following the completion of his Ph.D., he moved to the University of Southern California, where he served for 14 years, receiving an NIH senior research fellowship and rising to the rank of professor of biochemistry.

Paul was enticed to the UCSD during its formative years when direction was just being established. In 1967, he became provost of Revelle College, the earliest component of UCSD, and in 1972 he was appointed campus vice chancellor of academic affairs. He served in this office until 1980, when he returned to his first loves: teaching, mentoring, and research.

His tenure as provost spanned tumultuous times. The war in Vietnam stirred deep passions nationwide and on campus, and perceived authority figures became the target of student ire. From the outset, Paul faced his constituency through a large glass picture window bounding his provost's office—a manifestation of his philosophy of accessibility. As reward for his pains as student unrest continued, this window was shattered time and again, only to be replaced as he made clear his unequivocal dedication to dialogue and his wish to give students an opportunity not to break his windows.

Paul Saltman was irreverent in an endearing way, taking on hierarchical figures and colleagues when needed to further his precepts of academic virtue and student well-being. His steadfast efforts shaped Revelle into an innovative world-class college on a new and burgeoning university campus.

Teaching and mentoring were at the core of his being in the context of his role as a research professor. He received excellence-in-teaching awards from the University of Southern California, as well as from the four colleges at UCSD. He established the “Frontiers of Science” course as an option for non-majors to fulfill the noncontiguous minor requirement at Revelle College and designed it to prepare non-science majors to become the political, educational, and sociological leaders of tomorrow. He was named honorary alumnus of the year in 1999 by the UCSD Alumni Association and was honored by the establishment of the Paul D. Saltman Chair in Science Education at UCSD shortly before his death. His accolades from students bordered on the poetic, for he gave of himself unstintingly in his determination to bring out in all students the limit of their potential. His philosophy was straightforward: “To me, a great teacher is the person who, being sensitive and loving and creative in the discipline in which he is working, and actually on the cutting edge of that discipline, can bring that excitement to freshmen.”

With a generous grant from the NSF in conjunction with his service on the NSF Committee on Science Education, he established a summer program at UCSD for high school science teachers to acquaint them with the cutting edge of contemporary biology. Instruction was mounted by distinguished members of the UCSD faculty, and course recipients were obliged to convey their expanded reach to their home-school colleagues. An unprecedented accomplishment in his furtherance of science education was his mounting of a Gordon Research Conference devoted to science teaching, the only Gordon Conference in its venerable history dedicated to the challenges and urgencies of science teaching rather than to particularized research subject matter. In addition, he was consultant to the National Institutes of Health and the National Academy of Sciences, as well as to the NSF and local and regional agencies.

Paul was more visible to the public through his appearances on national televisions. Here, he presented a series called Patterns of Life for National Educational Television and a series for the Public Broadcasting System. He authored America and the Future of Man, the first of the Courses by Newspapers for the National Endowment for the Humanities. The publication of his landmark UCSD Nutrition Book offered a reassuring disquisition on sensible eating that absolved the public of the dietary fears inculcated by less-visionary nutritionists. His dedication to an emancipated approach to healthful nutrition won him the title “The Twinkie Doctor,” replete with a shellacked Hostess Twinkie on a pedestal in conjunction with an MVP (most valuable professor) award by the students of Muir College at UCSD.

Paul's special research preoccupation dealt with micronutrient metabolism and transport of iron in particular. His productive accomplishments were recognized with a Fulbright Senior Fellowship in 1981 and appointment to the Lady Davis Professorship in Jerusalem in 1987. However, in addition to his basic science contributions, his work led to significant clinical applications, including reduction of free-radical damage to the heart, prevention of anemia, enhanced physical performance, bone and skeleton metabolism, and, of course, rational diet.

Paul was a boxer and basketball player in college and a consummate surfer his entire adult life—an original member of the San Onofre Surfing Association. A historical cover of Chemical and Engineering News has Paul on his eight-foot mahogany board in the thrall of a wave that would make lesser men tremble. He surfed the way he approached life—upright, on the cutting edge, exhilarated, undaunted, and ready for anything.

George G. Laties
University of California
Los Angeles
Gatherings

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

FUTURE ASPP ANNUAL MEETING SITES

2000

JANUARY

January 13-14
Agricultural Microbes Genome I Conference
San Diego, California
Information on the meeting (including online registration forms and abstract instructions) is available at http://www.ag-microbial.org/.

FEBRUARY

February 20-24
World Congress of Young Farmers Conference
Orlando, Florida
For information check the Web site at http://www.fb.com/world. To contact please e-mail bhmgmt@aol.com or call 630-323-6880.

MARCH

March 5-9
New Frontiers in Plant Science and Plant Biotechnology
Toulouse-Labège, France

March 26-31
Postharvest 2000—4th International Conference on Postharvest Science
Jerusalem, Israel
For further information contact Professor Ruth Ben-Arie, PO Box 50006, Tel Aviv 61500, Israel; telephone +972-3-5140018; fax +972-3-5172484 or +972-3-5140077.

APRIL

April 1-5
The XVI International Congress on Sexual Plant Reproduction
Banff, Alberta, Canada
Coorganizers: Dr. D. D. Cass, University of Alberta (d.cass@ualberta.ca) and Dr. V. K. Sawhney, University of Saskatchewan (sawhney@admin.usask.ca). For information, check our Web site at http://www.usask.ca/biology/sprr/.

April 11-13
MICRO 2000
International Microscopy Conference & Exhibition
Hammersmith, London
For registration forms and information, contact Royal Microscopical Society, 37/38 St. Clements, Oxford OX4 1AJ, United Kingdom; telephone +44-1865-248768, fax +44-1865-791237, e-mail for conference information rebecca@rms.org.uk, e-mail for exhibition information allison@rms.org.uk. Web site http://www.rms.org.uk.

MAY

May 13-18
Auxin 2000
Ajaccio, Corsica
Organizers: Alan Jones, Catherine Perrot-Rechenmann, and Mark Estelle. For information on the speakers, venue, application for participation, and estimated costs, visit the Web site at http://www.isv.cnrs-gif.fr/CRJaux2000 or contact alan_jones@unc.edu.

May 14-19
World Congress for Soilless Culture on Agriculture in the Coming Millennium
Kibbutz Ma'ale Ha'chamisha, Israel
For information, contact the Congress Secretariat, Ortra Ltd., 1 Nirim Street, PO Box 9352, Tel Aviv 61092, Israel; telephone +972-3-6384444, fax +972-3-6384455, e-mail soil@ortra.co.il.

May 14-19
10th International Symposium on Iron Nutrition and Interactions in Plants
Houston, Texas
Organizing Committee Chairman: Michael A. Grusak. For information, contact Stancia Pemberton, USDAARS Children's Nutrition Research Center, 1100 Bates Street, Houston, TX 77030; telephone 713-798-7020, fax 713-798-7078, e-mail stanclp@bcm.tmc.edu.
JUNE

June 11-16
International Symposium on Grapevine Physiology & Biotechnology
Herklion, Greece
For information, contact Professor K. A. Roumelakis-Angelakis, Department of Biology, University of Crete, PO Box 2208, 71409 Herklion, Greece; telephone/fax +30-81-394459, e-mail: ponnoube@biology.uch.gr. Also, visit the symposium Web site at http://www.biology.uch.gr/meetings.

June 22-24
CUR 2000: The Many Facets of Undergraduate Research
The College of Wooster, Wooster, Ohio
For information, visit CUR's Web site at http://www.cur.org and go to the meetings and events section. The College of Wooster's Web site is http://www.wooster.edu/cur.

June 24-28
Molecular Biology of Model Legumes
John Innes Centre, Norwich, United Kingdom
For registration, contact UEA Conference Services, University of East Anglia, Norwich, NR47TJ, United Kingdom; telephone +44-1603-593271, fax +44-1603-250585, e-mail: legume@uea.ac.uk. Further details can be found at http://www.jic.bbsrc.ac.uk/events/elm-2000/.

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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 Raitsch, Lehrstuhl fuer Zellbiologie und Pflanzenphysiologie, Universitaet Regensburg, 93040 Regensburg, Germany; telephone +49-941-943-3021, fax +49-941-943-3352, e-mail: thomas.raitisch@biologie.uni-regensburg.de, Web site: http://www.biologie.uni-regensburg.de/invertase.

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3. Submit this statement to the University of Illinois at Urbana-Champaign, 200 N. Mathews Avenue, Urbana, IL 61801. If you do not wish to designate another officer, complete and attach the following:
   - A completed and signed Statement of Ownership, Management, and Circulation statement
   - A completed and signed Statement of Publication Information
   - A completed and signed Statement of Publication Date
   - A completed and signed Statement of Subscription and Distribution
   - A completed and signed Statement of Accountancy
   - A completed and signed Statement of Affiliation
   - A completed and signed Statement of Supplemental Information
   - A completed and signed Statement of Subscription and Distribution, revised
   - A completed and signed Statement of Accountancy, revised
   - A completed and signed Statement of Affiliation, revised
   - A completed and signed Statement of Supplemental Information, revised

For submission to the editor, your completed and signed form must be returned to the editor of the journal by the deadline specified by the editor.

Failure to do so within 30 days of publication may result in suspension of Periodical's subscription.

JUNE 29-JULY 2
Symposium on Biosynthesis of Glucose Polysaccharides
Schenk Continuing Education Building
Iowa State University, Ames
Registration deadline is May 30, 2000. For information, contact: Plant Biochemistry and Molecular Biology Conferences, Symposion Office, 3208 Molecular Biology Building, Iowa State University, Ames, IA 50011-3266; telephone 515-294-7578, fax 515-294-2244, e-mail pbmb@iastate.edu, Web site http://molebio.iastate.edu/~gfstlphomepg.

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- [ ] Government
- [ ] USA only
- [ ] Outside USA

US citizen? [ ] Yes [ ] No

Date available: 

Fields of interest, specialties, and publications titles:

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Thesis, dissertation topics, professor:

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Professional societies' and honors:

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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, 1500 Monona Drive, Rockville, MD 20855-2768 USA. Those seeking employment should complete the Placement Service Form on the facing 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, 1500 Monona Drive, Rockville, MD 20855-2768 USA; FAXED ADS ARE NOT ACCEPTED). A fee of $150 for print, Web, or both is charged for all academic/government/industry permanent positions and for all positions, regardless of rank, posted by private companies (private nonprofit companies are not charged a fee). If a fee is charged for your ad, please include billing information at the time the ad is submitted.

- **Academic/Government/Industry Permanent Positions (Ph.D.):** Limited to 200 words; ad will run 12 weeks on the Web and appear in one issue of ASPP NEWS. (If the ad runs only on the Web, the word limit is waived.)
- **Postdoctoral Positions and Research/Technical Positions (non-Ph.D.):** At universities and government installations, limited to 100 words; at private companies, limited to 200 words. Ad will run 12 weeks on the Web and appear in one issue of ASPP NEWS. (If the ad runs only on the Web, the word limits are waived.)
- **Assistantships, Fellowships, Internships, etc.** Announcements of programs and fellowships or internships for students seeking advanced degrees run at no charge and without a word limit. They will run two times in ASPP NEWS: the first time, they will run at full length; the second time, they will include location, contact name, and address, with a reference to the original posting. These announcements will run on the ASPP World Wide Web homepage for 12 weeks from the date of posting.

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**ACADEMIC/GOVERNMENT/INDUSTRY PERMANENT POSITIONS**

**Ph.D.**

Assistant/Associate Professor

Clemson University, Clemson, South Carolina

(Received 10/01)

A tenure-track position is available for a motivated individual to develop an interdisciplinary program in functional genomics at Clemson University. The candidate will establish an internationally recognized research program in basic and applied molecular aspects of plant or microbial biology and/or plant–microbe interactions. Applicants with experience in non-plant systems who have a desire to apply their expertise in functional genomics to important cropping systems will be considered. The candidate must hold a Ph.D. in a relevant discipline. Documented experience in functional genomics and acquisition of extramural support is essential. This position includes a competitive salary and generous start-up package. The successful candidate will work in the new $27 million Plant Biotechnology Building/Greenhouse Complex and will be associated with the CU Genomics Institute, a facility emphasizing high-throughput gene discovery projects in plants and fungi (http://www.genome.clemson.edu). Submit a curriculum vitae, official transcripts, four letters of reference, and a statement of professional goals to Functional Genomics Search, Dr. Kluepfel, Department of Plant Pathology, 120 Long Hall, Clemson University, Clemson, SC 29634; telephone 864-656-5728, e-mail DKLPLFL@clemson.edu. Review of applications will begin November 30, 1999, and continue until a suitable candidate is hired. Clemson University is an EOE/AA employer.

Faculty Positions

University of Massachusetts, Amherst

(Received 10/06)

The Department of Biochemistry and Molecular Biology expects to fill several faculty positions in the next three to four years in areas that interface biology and chemistry. We now invite applications for a tenure-track position at the associate/full professor level to begin September 2000, with a particular preference for individuals with research programs that complement our existing strength in plant molecular biology and biochemistry. Exceptionally qualified junior candidates will also be considered. Individuals working on fundamental questions in areas such as cell–cell communication, signal transduction, organelar biogenesis, nucleic acid and protein structure–function relationships are particularly encouraged to apply. We seek individuals with an established record of significant accomplishment in research and creative scholarship. The successful candidate will have access to graduate students from several interdisciplinary graduate programs and will be expected to participate in teaching at the undergraduate and graduate levels. Applicants should send a curriculum vitae, a description of research interests, and three letters of recommendation to Professor Lila M. Giersch, Head, Department of Biochemistry and Molecular Biology, LGRC 913, University of Massachusetts, Amherst, MA 01003-4505. Review of applications will begin on October 31, 1999, and continue until the position is filled. The University of Massachusetts is an equal opportunity employer/affirmative action employer. Women and members of minority groups are encouraged to apply.

Biologyist

Duke University, Durham, North Carolina

Plant Developmental Biology

(Received 10/14)

A tenure-track position is available fall 2000, for a biologist who is using genetic, biochemical, and molecular approaches to study aspects of the development of plants. The successful candidate will be expected to develop an externally funded research program and to participate in teaching both undergraduate and graduate courses. The person hired will be part of the Developmental, Cellular and Molecular Group situated in the new Levine Science Research Center, with a tenure-track appointment as an assistant professor. More detailed information about the program can be found at http://www.dcmb.duke.edu/htm. Applicants should provide (1) a resume, a two- to four-page description of their research plans, and a one-page teaching statement and (2) reprints of recent papers. Applicants should arrange for three
A tenure-track position is available for a biologist who uses functional genomics to study plant biology. We are especially interested in applicants who focus on structure-function analyses of proteins. Successful applicants will be expected to develop an externally funded research program and to teach at the undergraduate and graduate levels. The person hired will be part of either the Developmental, Cellular and Molecular Group or associated with the Organismal Biologists, with a tenure-track appointment as an assistant professor. Participation in the newly formed Duke University Institute for Genomic Science & Policy will also be expected. More detailed information about the program can be found at http://www.botany.duke.edu/. Applicants should provide (1) a resume and (2) a two- to four-page description of their research plans and a one-page teaching statement. Applicants should arrange for three letters of reference to be sent to Plant Functional Genomics Search, DCMB, Box 91000, Duke University, Durham, NC 27708. Review of all applications will begin on November 15, 1999. Duke University is an affirmative action/equal opportunity employer.

Assistant Professor Positions
McGill University, Montreal, Canada
(Received 10/15)

The Department of Biology at McGill University invites applications for two tenure-track positions at the assistant professor level in the area of molecular biology. One position is for a molecular cell biologist. The other position is for a molecular biologist in any area that complements the strengths of the department; preference will be given to candidates whose research addresses fundamental problems in plant molecular biology, functional genomics, or developmental biology. Applicants should hold a Ph.D. in biological sciences and have demonstrated research proficiency through postdoctoral training. The successful candidate will join a large and dynamic department with research strengths in cellular, molecular, and developmental biology; ecology; evolution; and neurobiology, with extensive affiliations with the Faculty of Medicine and local research institutes. Additional information on the department is available at http://www.mcgill.ca/Biology/biology1.htm. Duties will involve the development of a vigorous research program and teaching at the undergraduate and graduate levels. The expected starting date is July 1, 2000. Applications, including a curriculum vitae, a statement of research interests, and three letters of reference, should be sent to Dr. Donald Kramer, Chair, Department of Biology, McGill University, 1205 Docteur Penfield Avenue, Montreal, Quebec H3A 1B1, Canada; don_kramer@maclan.mcgill.ca. The deadline for applications is December 1, 1999, but applications will continue to be considered until the position is filled. In accordance with Canadian immigration requirements, this advertisement is directed in the first instance to Canadian citizens and permanent residents. McGill University is committed to equity in employment.

Plant Pathologist
Ocean Spray Cranberries, Inc.
Lakeville, Massachusetts
(Received 10/19)

Ocean Spray Cranberries, Inc., is currently accepting applications for a Cranberry Plant Pathologist. The successful candidate will lead a research program, of which the primary goal will be to reduce the incidence of cranberry disease, most notably fungal diseases, which affect fruit quality. In addition to conducting independent goal-oriented research, the incumbent will be responsible for developing strong research contacts with other pathologists, researchers, and Ocean Spray cranberry growers. Research efforts will include investigations to improve fungal disease control: for example, disease epidemiology, pathogen diagnosis and prediction, and improved disease control. The successful candidate should possess (a) strong plant pathology skills, (b) basic skills in molecular biology, (c) experience in field testing, including experimental design and data analysis, and (d) excellent communication skills. This position requires an M.S. or a Ph.D. in plant pathology. Interested candidates should send a letter of interest, resume, academic transcripts, and contact information of three references to Mr. Robert G. Donnelly, Human Resource Department, One Ocean Spray Drive, Lakeville, MA 02349. All or part of the requested information may also be submitted to rdonnelly@oceanspray.com. For more information about Ocean Spray, please visit our Web site at http://www.oceanspray.com. Ocean Spray is an affirmative action/equal opportunity employer.

Assistant Professor—Plant Biokinetics
University of Guelph, Ontario, Canada
(Received 10/25)

The Department of Plant Agriculture at the University of Guelph invites applications for a full-time, tenure-track research and teaching position at the rank of assistant professor. The successful candidate is expected to initiate a creative research program working in the areas of plant growth and development, and to teach courses in plant genetics/plantar physiology and postdoctoral training in one of these disciplines. Experience in horticulture is advantageous. The successful candidate is expected to develop original research for the promotion of the flower industry in Israel; to participate in research projects concerning plant growth and development, the role of environmental conditions on plant and flower development, and improvement and adaptation of new crops; and to develop an independent research on control mechanisms in plant development. Applicants should send a letter of

Assistant Professor—Plant Genomics
University of Guelph, Ontario, Canada
(Received 10/25)

The Department of Plant Agriculture at the University of Guelph invites applications for a full-time, tenure-track research and teaching position at the rank of assistant professor. The successful candidate is expected to initiate a creative research program working in the areas of plant growth and development, and to teach courses in plant genetics/plantar physiology and postdoctoral training in one of these disciplines. Experience in horticulture is advantageous. The successful candidate is expected to develop original research for the promotion of the flower industry in Israel; to participate in research projects concerning plant growth and development, the role of environmental conditions on plant and flower development, and improvement and adaptation of new crops; and to develop an independent research on control mechanisms in plant development. Applicants should send a letter of
Faculty Positions

Iowa State University, Ames
(Received 10/27)
The Plant Sciences Institute at Iowa State University invites applications for four faculty positions to conduct fundamental research at the genetic, molecular, and/or biochemical levels on how plants sense and/or respond to biotic or abiotic stresses. These represent the first of an anticipated 25 new hires in a multimillion-dollar initiative in the plant sciences. Positions are available at all academic ranks and are tenured or tenure-track with generous start-up packages.

Successful candidates will be expected to develop energetic, extramurally funded research programs, train graduate students, and participate in teaching activities. Departmental and college affiliations are negotiable. To apply, submit a letter of application; curriculum vitae; statement of research and teaching interests; recent reprints; and the names, addresses, e-mail addresses, and telephone numbers of at least three references to Dr. Charlotte R. Bronson, Interim Director, Center for Plant Responses to Environmental Stresses, Iowa State University, 351 Bessey Hall, Ames, IA 50011-1020; e-mail plantstress@iastate.edu, Web site http://www.plantsciences.iastate.edu.

Applications for assistant professor positions should arrange for letters of reference to be sent. Review of applications will begin on December 15, 1999, and continue until the positions are filled. ISU is an equal opportunity/affirmative action employer.

Assistant Professor—Turfgrass Physiologist
NJAES, Cook College, Rutgers University
New Brunswick, New Jersey
(Received 10/28)
A tenure-track position (80% research, 20% teaching) is available July 1, 2000, in the Plant Science Department. The incumbent will be expected to develop innovative and competitively funded research focusing on stress physiology, management, or soil science related to turfgrass germplasm enhancement. The candidate will conduct a broad range of problem-oriented field and laboratory research and will teach at least one undergraduate or graduate course each year. The candidate is also expected to mentor M.S. and Ph.D. students. Ph.D. in agronomy, plant science, horticulture, or soil science required. Experience in turfgrass science desired. Strong commitment to teaching, ability to obtain outside funding, and demonstrated ability to publish research in peer-reviewed journals essential. Salary and benefits are competitive. Applications accepted until February 28, 2000, or until a suitable candidate is selected. Send inquiries, including a curriculum vitae, transcripts, statement of teaching and research interests and long-range career goals, and the names and addresses of five references to Dr. William Meyer, Plant Science Department, Foran Hall, Cook College, 59 Dudley Road, New Brunswick, NJ 08901. Contact Dr. Meyer by telephone 732-932-0091, ext. 161, fax 732-932-9377, e-mail wmeyer@aesop.rutgers.edu. AA/EOE.

Assistant Legume Geneticist
Samuel Roberts Noble Foundation
Ardmore, Oklahoma
(Received 10/28)
The Forage Biotechnology Group (FBG) at the Samuel Roberts Noble Foundation is seeking an applied legume geneticist. The Noble Foundation is a nonprofit organization of approximately 200 employees involved in community service, agricultural consultation and research, and fundamental plant biology research. The mission of the FBG is to develop improved forages for the southern Great Plains and, in the process, advance the science of forages. The applied legume geneticist will conduct a program to identify agronomically useful genes, taking advantage of access to the Medicago truncatula functional genomics program in the Plant Biology Division, and incorporate such genes into elite alfalfa germplasm for eventual variety release. The applied legume geneticist will also conduct a breeding program focused on developing improved forage legume varieties adapted to the southern Great Plains. Qualifications include a Ph.D. in an appropriate area of plant science plus additional experience in applied plant breeding. Salary commensurate with qualifications and experience. Health and retirement benefits provided. Send a letter of application and a detailed resume, and arrange for three letters of reference to be sent, to Applied Legume Geneticist, Human Resources Dept., The Samuel Roberts Noble Foundation, 2510 Sam Noble Parkway, Ardmore, OK 73401. Application and job description obtainable from our Web site at http://www.noble.org.

Dean
University Of Washington, Seattle
(Received 10/28)
The University of Washington invites applications and nominations for the position of dean, College of Forest Resources. The college holds a position of national and international leadership in instruction and research. The college's Seattle location, a vibrantly urban city in a region rich with natural resources, offers a unique opportunity to address issues of urbanization and its ecological implications. College faculty and students enjoy interdisciplinary collaboration with prominent departments throughout the university, including programs in the natural sciences, engineering, and business. For more information, see http://www.cfr.washington.edu. The dean must be able to work with a diverse university community, as well as public and private agencies outside the university. The candidate should be qualified by academic or practitioner performance to be appointed to the rank of professor. Preferably, applicants should be prepared to assume the position during or before fall 2000. Review (until the position is filled) of applications will begin on October 29, 1999. Correspondence should be sent to the Committee on the Deanship of the College of Forest Resources, Dean Denice D. Denton, Chair, c/o Linda Kaye, Box 351237, University of Washington, Seattle, WA 98195-1237. The university is an equal opportunity/affirmative action employer.

Faculty Positions

University of Minnesota, St. Paul
(Received 10/29)
The University of Minnesota's initiative in cell and molecular biology provides for the hiring of at least eight new faculty in the Department of Plant Biology over the next three years. We are currently accepting applications from scientists with expertise in plant developmental biology or in experimental or computational aspects of plant genomics. Successful candidates must have a Ph.D. and strong publication record and will be expected to develop strong, externally funded research programs and to contribute to the undergraduate and graduate teaching programs. Substantial start-up funds are available. For more information, contact http://biobsci.cts.umn.edu/ cbs.html. Please send a curriculum vitae, statement of research and teaching interests, and three letters of recommendation to either the Plant Development Search Committee or to the Plant Genomics Search Committee, Department of Plant Biology, University of Minnesota, 1445 Cortner Ave., St. Paul, MN 55108. Review of applications will begin December 15, 1999. The University of Minnesota is committed to the policy that all persons shall have equal access to its programs, facilities, and employment without regard to race, color, creed, religion, national origin, sex, age, marital status, disability, public assistance status, veteran status, or sexual orientation.

Chairperson
Michigan State University, East Lansing
(Received 10/29)
The College of Natural Science and the College of Agriculture and Natural Resources at Michigan State University invite applications and nominations for the position of chairperson of the Department of Botany and Plant Pathology. MSU is a premier land-grant and AAU institution. The Department of Botany and Plant Pathology, which enjoys an excellent national reputation, comprises 27 regular faculty, nine jointly appointed faculty, one USDA scientist, 60 graduate students, more than 70 undergraduate majors, and a dedicated support staff of career professionals. Further information can be found at http://www.botany.msu.edu. MSU has recently committed to the recruitment of four new plant biology faculty, some of whom will likely have appointments or associations with Botany and Plant Pathology. Additional positions are open within the department. The chairperson provides leadership and promotes a creative environment for instruction, research, and extension programs of this diversified department and fosters collaborative efforts in all aspects of the unit's mission across campus and throughout the state. Candidates must possess an established record of distinguished scholarship, administrative experience, proven leadership and interpersonal
skills, excellent communications abilities, and a broad vision of innovative programs in plant biology research, education, and extension. Continuation of an active research program is encouraged and supported. Applicants should submit a complete curriculum vitae and names, addresses, and telephone numbers of five references. Every effort will be made to maintain confidentiality until the final slate of candidate is selected. Review of applications will begin February 15, 2000. Please send application materials to Search Committee, Department of Botany and Plant Pathology, Michigan State University, East Lansing, MI 48824-1312. Anticipated starting date will be January 2001. Women and under-represented minorities are strongly encouraged to apply. MSU is an affirmative action/equal opportunity employer.

Assistant/Associate Professor
Iowa State University, Ames

(Received 10/31)
A 12-month tenure-track appointment in research (75%) and teaching (25%) is available beginning July 1, 2000 (vacancy number 995524). Responsibilities will include the establishment of basic and applied research in the area of turfgrass breeding and genetics with experience in biotechnology preferred. Required qualifications: Ph.D. in plant genetics or related field with experience in plant breeding and molecular biology. Demonstrated ability in effective written and verbal communication and innovative thinking. Salary will be competitive and commensurate with training and experience. Applicants should send a curriculum vitae, transcripts, and a cover letter with a brief statement of research and teaching interests (not to exceed two pages), reprints of key publications (up to five), and three letters of reference by December 15, 1999, to either Dr. Michael H. Chaplin, Professor and Head, 106 Horticulture Hall, Iowa State University, Ames, IA 50011; telephone 515-294-9718, fax 515-294-0730, e-mail chaplin@iastate.edu or to Dr. Nick Christians, Chair of Search Committee, Department of Horticulture, Iowa State University, Ames, IA 50011; telephone 515-294-0336, fax 515-294-0730, e-mail nxchris@iastate.edu. For additional information about employment opportunities at Iowa State University, contact the Recruitment & Employment Office, 16 Beardshear Hall, Ames, IA 50011-2033; telephone 515-294-2936, e-mail employment@iastate.edu, Web site http://www.iastate.edu/hrv/jobs/jobs.html. Iowa State University does not discriminate on the basis of race, color, age, religion, national origin, sexual orientation, sex, marital status, disability, or status as a U.S. Vietnam era veteran. Anyone who has inquiries concerning this may contact the Director of Affirmative Action, 318 Beardshear Hall, 515-294-7612.

Postdoctoral Position
The Institute for Genomic Research
Rockville, Maryland

(Received 09/01)
A postdoctoral position is available immediately studying tomato genomics. ESTs from a variety of tomato tissues are being generated and used to construct the TIGR Tomato Gene Index (http://www.tigr.org/db/tgf/indexes.html). The candidate will be expected to use bioinformatics tools for database analysis and will have the opportunity to pursue research interests in functional genomics as it relates to this project. Requirements include a Ph.D. in plant science and experience in molecular biology. Knowledge of relational database systems is highly desirable. Contact Catherine M. Ronning, Collaborative Investigator, The Institute for Genomic Research, 9712 Medical Center Drive, Rockville, MD 20850; e-mail cronning@tigr.org.

Postdoctoral Position
National Institute for Agronomical Research (INRA)
INRA-Bordeaux, France

(Received 09/10)
A two-year postdoctoral position is available immediately at INRA-Bordeaux to study endoreduplication during tobacco fruit development and the related inhibitory mechanisms of cell division. The successful applicant should have a strong background in plant cell biology, physiology, biochemistry. Relevant experience includes protein purification and determination of kinase activity. Experience in plant molecular biology is preferred. The yearly stipend is around 34,000 FF. Send curriculum vitae, publication list, and names and contact addresses of references to Dr. Christian Chevalier, Unité de Physiologie Végétale, INRA-Bordeaux, B.P. 81, 33883 Villenave d’Ornon cedex, France; e-mail chevalie@bordeaux.inra.fr.

Two Postdoctoral Research Associate Positions
North Carolina State University, Raleigh

(Received 09/13)
Two postdoctoral research associate positions are available to work jointly among the labs of Drs. Ralph Dewey (Department of Crop Science), Becky Boston (Botany Department), and Wendy Boss (Botany Department) at North Carolina State University in the area of soybean genomics. Funded by a collaborative research program established between the United Soybean Board and DuPont, the projects are specifically designed to elucidate the mechanism(s) by which ER membrane biogenesis is regulated during seed development. A variety of methods will be employed to alter ER membrane biosynthesis through what is termed the unfolded protein response in either transformed soybean somatic embryos or soybean cell cultures, followed by biochemical and genomic analysis. Considerable interaction with our industry collaborators is expected, including on-site training in the synthesis, probing, and analysis of microarrays at the DuPont Biotechnology/Genomics Center. NC State University does not discriminate on the basis of race, color, age, religion, national origin, sex, sexual orientation, marital status, or disability. Interested individuals are invited to contact Dr. Dean Riechers at riechers@ncsu.edu.

Postdoctoral Position
University of Missouri, Columbia

(Received 09/15)
A postdoctoral position in cell division is available to work on an NSF-funded project aimed at understanding the regulation of cell division. The project aims to deepen knowledge of how a growing plant organ controls the spatial distribution of cell division, using as a model the root meristem of Arabidopsis thaliana. Funding is available for up to three years. The applicant must have a Ph.D. in a relevant subject area. Applicants with experience in the molecular control of the cell cycle, or with mathematical prowess, such as experience with kinematics, are highly desirable. To apply please send curriculum vitae, a description of your research experience, and the names and addresses (including e-mail) of three references to Tobias Baskin, Biological Sciences, University of Missouri, Columbia, MO 65211-7400; telephone 573-882-0173, fax 573-882-0123, e-mail BaskinT@missouri.edu.

Postdoctoral Research Associate
University of Illinois, Urbana-Champaign

(Received 09/22)
A postdoctoral position is available to study molecular aspects of inducible herbicide detoxification genes in Triticum (Genome 41, 368-372). The project will involve cloning, analysis of expression, and promoter characterization. Candidates should have a Ph.D. and a strong background in plant molecular biology. Demonstrated proficiency in oral and written communication is required. Previous experience in examining DNA-protein interactions is desirable. Applicants should submit a letter, curriculum vitae, and the names and e-mail addresses of three references to Dr. Dean Riechers, University of Illinois, Department of Crop Sciences, 1102 S.
A postdoctoral position is available to study Arabidopsis. The salary will be 13500 SKr per month (tax free). Interested candidates should send a curriculum vitae including names and addresses with e-mail addresses and/or fax numbers of three references no later than October 31, 1999, to Dr. Olof Olsson, Department of Cell and Molecular Biology, Goteborg University, Box 69978, 405 30 Goteborg, Sweden; telephone +46 31-640-8598, e-mailoblepel@post.tau.ac.il.

Postdoctoral Position

Tel Aviv University, Israel

A postdoctoral position is available to study intercellular trafficking of proteins and viruses via plasmodesmata using cellular, molecular, and proteomic approaches. The aim of this project is to identify the cellular components involved in mediating and regulating this cell-to-cell trafficking of macromolecules. A Ph.D. in cell biology, protein biochemistry, molecular biology, genetics, or virology is required. To apply, send a letter of application, curriculum vitae, and names and addresses of three references (by fax or e-mail) to Professor Bernard L. Epel, Department of Plant Sciences, Tel Aviv University, Tel Aviv 69978, Israel; fax +972-3-640-8598, e-mail blepel@post.tau.ac.il.

Postdoctoral Position

Goteborg University, Goteborg, Sweden

We seek a highly motivated postdoc to elucidate the molecular role of two new homeobox genes in Arabidopsis. These genes belong to the recently discovered PALE class (Hertzer and Olsson, Plant J. 16, 285-295, 1998). The work will involve expression studies and phenotypical characterization of transgenic Arabidopsis PALE plants and knock-out mutants. Prior experience with Arabidopsis will be a plus. The position is for one year with a possibility for an extension. Starting date is as soon as possible but not later than January 15, 2000. The salary will be 15350 SKr per month (tax free). Interested candidates should send a curriculum vitae including names and addresses with e-mail addresses and/or fax numbers of three references no later than October 31, 1999, to Dr. Olof Olsson, Department of Cell and Molecular Biology, Goteborg University, Box 462, SE 405 30 Goteborg, Sweden; telephone +46 31-773462, fax +46 31-773 3801, e-mail olof.olsson@molbio.gu.se.

Postdoctoral Position

Samuel Roberts Noble Foundation

A postdoctoral position ($31,000/year) is available in Dr. Nancy L. Pan's laboratory to continue studies characterizing clones of putative transcriptional regulators of phytoalexin biosynthesis (Plant Cell 6, 1789; 1994) and genetic manipulation of natural products in alfalfa. Molecular biology and/or biochemistry experience essential. Experience with plant transformation, binary vector construction, or analysis of protein-DNA interactions desired. Send curriculum vitae, names of three references, and letter describing research interests and experience to Ms. Jane Nance, Job#PB27399-INP, Noble Foundation, PO Box 2180, Ardmore, OK 73402; e-mail jenancenoble.org. For general information on past/current projects, visit http://www.noble.org/AR98/ NP98.htm.

Postdoctoral Position

University of California, Berkeley

Applications are invited for a postdoctoral position to study molecular genetics of plant development. Successful candidates have the choice of studying one of two projects: (1) IAA signaling and provascular development or (2) molecular mechanism of EMF-regulated plant development. We are employing a variety of molecular genetic techniques as well as immunological and genome (gene expression profiling) approaches to investigate the above problems. For details of the projects, please check our Web site at http://planbio.berkeley.edu/~sung/. Applicants can e-mail a personal statement, curriculum vitae, and two letters of recommendation to Renee Sung at rsung@nature.berkeley.edu or mail the information to Professor Renee Sung, Department of Plant and Microbial Biology, University of California, Berkeley, CA 94720.

Postdoctoral Positions

Mitsui Chemical, Inc., Chiba, Japan

Two postdoctoral positions are available immediately to investigate the biochemical and physiological changes in transgenic plants that express C4-related enzyme(s) and establish protein accumulation system in crops. For the former position, applicants should have extensive experience in techniques related to photosynthesis research. Knowledge and skills in plant molecular biology are helpful. For the latter position plant molecular biologists with a strong agricultural research background are encouraged to apply. These positions are available for a minimum of two years. It is desirable that applicants live in Japan at present. Please send a letter of application, curriculum vitae, and the names of three references with e-mail addresses to Dr. H. Honda, Biotechnology Group, Life Science Laboratory, Mitsui Chemical, Inc., 1144 Togo, Mobarra, Chiba, 297-0017, Japan; e-mail hideo.honda@mitsui-chem.co.jp.

Postdoctoral Position

Max-Planck Institute of Chemical Ecology

A postdoctoral position is immediately available in the Forage Biotechnology Group of the Noble Foundation. The position is initially available for two years with the possibility of renewal for an additional year. Annual salary is in the range of $31,090-$46,630 depending upon qualifications and experience. For details of the project, contact Dr. Zengyu Wang at zywang@noble.org or 580-221-7368. For application, send a cover letter and detailed curriculum vitae and arrange for three letters of reference to be sent to Ms. Nancy Nance, Human Resources Department, Attn: Job# FBG3099-LZW, The Samuel Roberts Noble Foundation, PO Box 2180, Ardmore, OK 73402.

RESEARCH/TECHNICAL POSITIONS

(Res.-Ph.D.)

Researchers

Performance Plants Inc., Ontario, Canada

Performance Plants Inc. is a plant biotechnology company whose mission is to genetically modify plant metabolism to improve agricultural productivity. The company is seeking experienced B.Sc. or M.Sc. level molecular biologists to generate and study transgenic plants in our Kingston and Saskatoon laboratories. This
research is part of a team-based approach focused on identifying plants and technologies suitable for future commercialization. The successful candidates must have at least two years’ practical lab experience and ideally will be detail-oriented, well organized, self-motivated, enthusiastic, adaptable, and able to appreciate goal-based research and development. Performance Plants offers a strong benefits package and is an equal opportunity employer. Company information can be found at http://www.performanceplants.com. Kingston applicants should have experience in standard molecular techniques, RT-PCR, northerns, and PAGE. Knowledge of stress signaling, pollination biology, or plant development is advantageous. Saskatoon applicants should have experience in standard molecular manipulation as vector construction, RT-PCR, northerns, and PAGE. Knowledge of promoter characterization, transient plant expression systems, or plant physiological analysis is advantageous. Application letters should be sent to Louise Thornton, Human Resources Manager, Performance Plants Inc., Biosciences Complex, Queen’s University, Kingston, Ontario, Canada, K7L 3N6; fax 613-545-3618, e-mail thornl@post.queensu.ca. The application closing date is December 1, 1999. Applicants holding a Ph.D. will not be considered.

ASSISTANTSHIPS, FELLOWSHIPS, INTERNSHIPS, ETC.

Graduate Assistantships
University of Florida, Gainesville
(Received 05/20)
Research teaching assistantships are available in the Horticultural Sciences Department 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. J. H. Huber, Graduate Coordinator, Horticultural Sciences Department, PO Box 110690, University of Florida, Gainesville, FL 32611-0690; telephone 352-392-1928, ext. 216, e-mail reg@ufl.ifas.ufl.edu. The University of Florida is an equal opportunity employer.

Graduate Fellowships and Assistantships
Michigan State University, East Lansing
(Received 09/20)
Michigan State University is pleased to announce graduate fellowships and assistantships in the plant sciences. Graduate assistantships are available in nine departments or programs as listed below. In addition, the newly established Plant Science Fellowships provide outstanding candidates with funding for the first two years of study. Fellows may select a department upon enrollment, or if desired, may perform research rotations in any plant science-related laboratory on campus, regardless of department or program. After the first year, rotating students will choose a major professor and graduate degree program. After the second year, funding will be provided by the major professor and department. Each Plant Science Fellow also will receive a $2,000 professional enhancement grant to facilitate travel to scientific meetings or other relevant activities. Participating departments and graduate programs include Biochemistry (http://www.bch.msu.edu/); Botany (http://www.bpp.msu.edu/); Cellular and Molecular Biology (http://www.ns.msu.edu/cmb/); Crop and Soil Sciences (http://www.css.msu.edu/); Ecology and Evolutionary Biology and Behavior (http://www.scc.msu.edu/ebeb1); Entomology (http://www.ent.msu.edu/); Forestry (http://www.fore.msu.edu/); Genetics (creator.ns.msu.edu/genetics/); Horticulture (http://www.hrt.msu.edu/); the MSU-DOE Plant Research Laboratory (http://www.prl.msu.edu/); and Plant Breeding and Genetics (http://www.hrt.msu.edu/plbg). To obtain more information about the Plant Science Fellowships or Plant Science programs at Michigan State University, please contact Ms. Judy Ward, The Graduate School, Michigan State University, 118 Loomis Hall, East Lansing, MI 48824; telephone 517-355-0301, e-mail wardjd@msu.edu, MSU Plant Science Web site http://www.msu.edu/user/gradsch/plantsci.htm.

Graduate Research Assistantship
University of Florida, Gainesville
(Received 10/25)
A Ph.D.-level research assistantship is available at the University of Florida to participate in an interdisciplinary plant metabolic engineering project on one-carbon metabolism. The project is funded by NSF, DOE, and NIST and involves a network of PIs at five universities: Andrew Hanson (University of Florida), Hans Bohnert (University of Arizona), David Rhodes (Purdue University), Douglass Gage (Michigan State University), and Yair Shachar-Hill (New Mexico State University). The project involves molecular biology, metabolic biochemistry, MS and NMR analysis, and computer-assisted modeling of metabolism. There will be opportunities to work for short periods in other labs of the network. Applicants should preferably already have an M.Sc. degree. The basic annual stipend is US $15,000 (with raises generated by the Graduate Student Union), plus tuition waivers for three years; the stipend could be raised for students with highly relevant experience. Preference will be given to U.S. or Canadian students because of the source of funding. To apply, send letter of interest; curriculum vitae including GRE scores and description of previous lab experience; and names, addresses, and telephone numbers of three references to Andrew Hanson, University of Florida, Horticultural Sciences Department, Gainesville, FL 32611-0690; telephone 352-392-1928, ext. 334, e-mail adha@gnv.ifas.ufl.edu.

Graduate Research Fellowships
Oregon State University, Corvallis
(Received 10/15)
The Horticulture Department at Oregon State University is offering two graduate research fellowships, the ARCO and Swallow Fellowships, to conduct research that leads to an M.S. or a Ph.D. degree and contributes to research programs within the department and discipline. Faculty interests include plant breeding and genetics, plant physiology, post-harvest physiology, biotechnology, molecular biology, sustainable agriculture, and horticultural systems that integrate basic plant and crop management sciences in nursery, orchard, berry, and vegetable cropping systems. The fellowship stipend is $16,500 for M.S. candidates and $18,000 for Ph.D. candidates; tuition will be waived. Applicants with a B.S. or B.A. degree in agriculture, biology, horticulture, or related field are preferred. Selection will be based on academic achievements, GRE scores, academic and/or work experience, letters of reference, and a personal letter describing goals and interests in research. The application deadline is February 15, 2000. In addition to these fellowships, graduate research assistantships are offered by faculty members, for which there is no application deadline. For further information, contact Dr. Markfield Mok, Department of Horticulture, Oregon State University, ALS 4017, Corvallis OR 97331-7149, e-mail mokm@bcc. orst.edu. View our Web site at http://www.orst.edu/dep/hort/grad.

Graduate Research Assistantship
West Virginia University, Morgantown
(Repeat)
For information, contact the division office at 304-293-4817 or Dr. Sven Verlinden at the Division of Plant and Soil Sciences, PO Box 6108, Morgantown, WV 26505; telephone 304-293-6023, e-mail sverlind@wvu.edu. (Details September/October 1999 ASPP NEWS)

Graduate Assistantship
University of Florida, Gainesville
(Repeat)
For information, contact Dr. Baia Rathinasabapathi, Assistant Professor, Horticultural Sciences Department, IFAS, PO Box 110690, University of Florida, Gainesville, FL 32611-0690; telephone 352-392-3991, fax 352-392-5653, e-mail brath@gnv.ifas.ufl.edu. (Details September/October 1999 ASPP NEWS)

Graduate Research Assistantship
Colorado State University, Fort Collins
(Repeat)
For information, contact Dr. Michelle L. Jones, Department of Horticulture and Landscape Architecture, 111 Shepardson, Colorado State University, Fort Collins, CO 80523; telephone 970-491-7215, fax 970-491-7745, e-mail mljones@lamar.colostate.edu. (Details September/October 1999 ASPP NEWS)

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# 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>Name</th>
<th>Extension</th>
<th>E-Mail Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>John Eiseck, Jr.</td>
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<td>Susan Chambers</td>
<td>ext. 111</td>
<td><a href="mailto:schambers@aspp.org">schambers@aspp.org</a></td>
</tr>
<tr>
<td>Sandra Granados</td>
<td>ext. 140</td>
<td><a href="mailto:grana@spp.org">grana@spp.org</a></td>
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<td>Kelly Moore</td>
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<td><a href="mailto:kmoores@aspp.org">kmoores@aspp.org</a></td>
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</tbody>
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*Subscriptions, institutional: Sunbelt Fulfillment Service, Brentwood, Tennessee, 877-575-9641*

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