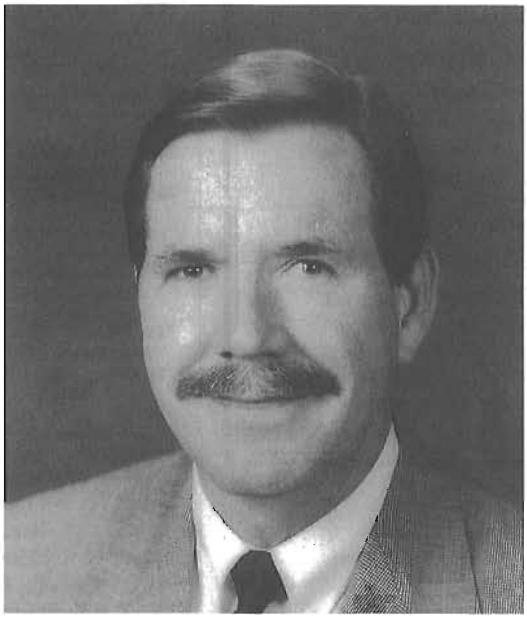
THE NEWSLETTER OF THE AMERICAN SOCIETY OF PLANT PHYSIOLOGISTS

Volume 25, Number 4 July/August 1998

ASPPNEWS

THANK YOU AND FAREWELL



Kenneth M. Beam
ASPP Executive Director
1993–1998

I have had the pleasure of serving as your executive director for the past five years, and this letter will outline my thoughts and allow me to give thanks to all of you. I am leaving ASPP to become the president and CEO of the American Association of Motor Vehicle Administrators, a large trade association located here in the Washington, DC, area.

Although I am excited about this new job and the new challenges, I will miss all of you in this great organization. When I look back on the past five years, there are a lot of positive and successful things to consider, and I am proud that I have played a part in the history. We started a very successful public affairs program, moving away from our previous model of congressional interns and into a professional government relations program that has involved many ASPP members in its efforts. We serve as a model for other scientific societies in this area.

We created a foundation for the Society that has as its purpose raising funds for ASPP programs. We have recruited the top people from the leading companies in our field, and many new programs are planned or are in progress. The Disney project referred to elsewhere in this newsletter is but one example of these new programs.

The ASPP annual meetings are planned and carried out with high standards, and this event continues to improve in both scientific content and attendance. Our headquarters operations have been completely overhauled and modernized, and I am very confident in our new capabilities and in the high level of service provided to our members.

Our ASPP publications efforts are moving ahead quickly. *Plant Physiology* and THE PLANT CELL are the two best plant science journals in the world, and the way the libraries view these publications validates this opinion. Other science journals are losing institutional subscriptions; our two journals are not. We have moved into the electronic age by making the full text and graphics of our journals available online. Beginning next year, this electronic subscription will be free to all ASPP members. Also, our fledgling book publishing efforts will soon take wing: Our plant biochemistry textbook is due to be published next year.

continued on page 3

INSIDE...

▼ Tracking the Green Millennium
▼ Plant Biology '98 Meeting
▼ Endowed Chair in Plant Biology Donated to University of Massachusetts

CONTENTS

1
ASPP Executive Director Resigns

3
New Editors for *Plant Physiology*

4
Tracking the Green Millennium

5
ASPP–Epcot Exhibits Extend Plant Science Awareness
ASPP Education Foundation Board Meeting

6
Managing Editor of THE PLANT CELL Resigns
Plant Biology '98

8
Public Affairs
- $50 Million Sought for Plant Genome Research Senate Appropriations
- DOE Research Spending Typo Corrected
- ASPP Seeks Support for Plant Research
- Computers & Collaborations Keys to Research in Age of Biology
- CoFARM Advertisement Supports Research Using Plant Biotechnology
- 100 Congressional Staff Visit Science Exhibition of NSF-Supported Research

14
ASPP Education Forum

16
Section News

17
ASPP Sponsors National Academy Symposium on Plant Stress
Endowed Chair in Plant Biology Donated to University of Massachusetts

19
Gatherings

22
Jobs

Deadline for September/October 1998 *ASPP NEWS*: August 10, 1998

Future ASPP Annual Meetings

1999
Saturday, July 24, through Wednesday, July 28
Baltimore, Maryland
ASPP's 75th anniversary meeting

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

ASPP NEWS

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. 17.

ASPP OFFICERS & STAFF

Headquarters Office
15501 Monona Drive
Rockville, MD 20855-2768 USA
Phone: 301-251-0560
Fax: 301-279-2996

continued from page 1

For the second straight year, member dues will not be raised. Nor will member subscription rates be raised in 1999. We can do all these things because the finances of this Society have been properly managed for many, many years. We have sufficient reserves to be able to fund a huge project such as a major textbook. Our past operating surpluses allow us to maintain a balanced budget without raising prices. Of all the things I can reflect on these past five years, I am most proud of the fact that we have never had a deficit—our bottom line has always been protected.

As I leave ASPP I would like to thank those individuals who have made my tenure here so enjoyable. First, I want to thank the ASPP leadership for the way in which I have been treated. The dignity, respect, support, and encouragement I have always received have been very gratifying. A chief staff officer could not have had it better, and I will always be grateful.

Any accomplishments I have made could not have been achieved without my fellow staff colleagues. You have a great staff here in Rockville—dedicated, hard working, and just a great group of people. It has been my good fortune to call them colleagues and to work side by side with these good folks.

Last, I want to thank you, the members of ASPP. It is because you are a great community of scientists that it has been an honor and a privilege to have worked for you. I have always been very impressed with the passion and enthusiasm each of you has for your science. What you do is so important for this entire world, and it has made me feel important to be a part of you and this great Society. Thank you, and keep up the great work!

The ASPP Executive Committee has appointed a search committee to hire my replacement, and I am certain they will get a super person. The future for ASPP is bright, indeed, and I am confident that the leadership, staff, and members will maintain the momentum of this wonderful organization. Thank you and farewell.

Editorial Board of *Plant Physiology* Adds Strength in Growth Areas of Cell Biology, Plant Stress, and Genomics

Plant Physiology's policy of rotating its editorial board members after six years forces us to say goodbye to many long-time editors and to welcome 17 new members. Such rotations allow us to keep up with the changing face of plant biology and to add strength in new areas, and this is most clearly reflected in the new associate editors.

Editor-in-Chief Maarten Chrispeels and the staff of the journal wish to thank the following scientists who have served the journal for the past six years (some editors have served even longer): Gloria Coruzzi, Malcolm Drew, June Nasrallah, Charles Yocum, Thomas Boller, Ray Bressan, Donald Briskin, Ray Chollet, Ken Cline, Peter Horton, Stephen Howell, Alan Jones, Steve Kay, Harry Klee, Andrew Mort, Niels Nielsen, David Ow, Ron Poole, Robert Sharp, and William Taylor. Their expertise will be missed.

The new associate editors and their areas of expertise are Joanne Chory (growth and development), Peter Hepler (cell biology and signal transduction), John Browse (biochemistry and macromolecular structure), Don Ort (environmental stress and adaptation), Vicki Chandler (molecular genetics and genomics), Sharon Long (interactions of plants with other organisms), and Jan Zeevaart (whole-plant processes). Ann Hirsch is serving as associate editor in Sharon Long's absence until the fall of 1998.

The following monitoring editors started on July 1: Neil Baker (bioenergetics), Nick Carpita (cell walls), Geoff Fincher (protein structure), Alice Harmon (protein phosphorylation), Teh-hui Kao (development of reproduction), Anthony Kinney (lipid biochemistry), Gayle Lamppa (chloroplast biology), Philip Low (oxygen burst and oxidative stress), Donald McCarty (molecular biology), Gloria Muday (auxin action), Champa Sengupta-Gopalan (nitrogen assimilation), J. Andrew C. Smith (ion transport and salt stress), Heven Sze (membrane transport), Steve Tyerman (water relations, ion pumps), and Richard Vierstra (phytochrome and protein turnover).

A complete list of the editorial board and staff, along with addresses, phone, fax, and e-mail addresses, is listed on the *Plant Physiology* Web page at http://aspp.org. We look forward to a good year with this strong board of editors.

Tracking the Green Millennium

A Letter from THE PLANT CELL Editor Ralph Quatrano

I am fortunate indeed to be assuming the editorship of THE PLANT CELL, a journal that has maintained its preeminence during the past decade by bringing to you some of the most important and significant research papers in modern plant biology. By continuing to realize the goals that were set for it over 10 years ago—minimizing the time between article submission and publication, providing high-quality reproduction of images and text, and publishing only those papers that report highly novel and significant findings—THE PLANT CELL will continue to have a major impact on plant biology as we move into the next millennium.

THE PLANT CELL's achievements to date are reflected in two of the most recent rankings of the journal's impact, as estimated by the Institute for Scientific Information's (ISI's) analyses of the frequency with which articles published in the journal are cited throughout the scientific literature. Our 1996 impact factor of 9.579 is highest by far among the plant science research journals, and it places THE PLANT CELL 12th among all major biologically oriented journals, in a cluster with *Molecular Biology of the Cell* and *Development*. Research published in THE PLANT CELL is also extremely current—ISI's 1996 "immediacy index" for the journal, an estimate of how often papers we published in 1996 were cited in other articles published that year, places THE PLANT CELL closest in ranking to *EMBO Journal* and *FASEB Journal*, within reach of the top five biological journals.

The continued excellence of the research published in THE PLANT CELL results in large part from the efforts of Bob Goldberg, the founding editor, and his successor, Brian Larkins. They have both been able to instill in their coeditors the tradition of selecting only the most novel and creative articles—those that make the most significant contributions to our basic understanding of plant growth and development. The journal's coeditors have all made their mark as well, but, unfortunately, they cannot stay with us forever. Indeed, changes in the editorial board will continue as Tim Nelson, Steve Briggs, and John Mullet rotate off in the next few months and Pat Zambryski takes a one-year sabbatical leave. They have each made major contributions, especially Tim Nelson, who has been on our editorial board since June 1989.

I must also acknowledge the contributions that the journal's staff has made toward meeting these objectives. Outgoing managing editor Judy Grollman was instrumental in establishing the manuscript tracking and journal production protocols that have enabled us to meet our tight publication schedules. As Brian Larkins, Bob Goldberg, and I stated in the July issue of THE PLANT CELL, Judy's dedicated efforts to ensure the efficacy of these procedures while simultaneously upholding the journal's rigorous production standards will be sorely missed. Her example has set a model of excellence to which all of us associated with THE PLANT CELL will be challenged to adhere. Doubtless, incoming managing editor Crispin Taylor, who was promoted in late June from his former position as news and reviews editor, and the remainder of THE PLANT CELL staff will rise enthusiastically to this challenge.

As Editor, I will continue to follow the basic policies that have made THE PLANT CELL the best plant science research journal, and I will strive to further improve its publication of very high impact papers. Toward this goal, THE PLANT CELL will continue to review papers covering broad areas of plant science and the associated technologies. We will concentrate on full articles describing novel and significant findings that will have an impact on all aspects of plant biology, from molecules and cells to physiology and evolution.

The journal's emphasis on papers that focus on plant cell and developmental biology, signaling pathways, plant/microbe/animal interactions, and molecular trafficking at the intracellular, intercellular, and whole plant levels will certainly continue. It is also likely that findings in emerging areas such as genomics and developmental evolution will begin to infiltrate the pages of THE PLANT CELL, as will papers concerned with mechanisms that regulate the biosynthesis of primary and secondary metabolites. Moreover, we will continue to encourage submission of reports detailing significant findings from the widest possible range of plant and microbial species—what matters most is that the data are of general import and relevance to plant biology.

These objectives and the truly international nature of plant biology are reflected in the research interests of four new members of the editorial board of THE PLANT CELL. Michel Caboche (Institut National de la Recherche Agronomique, Versailles, France), who is joining the board as a second associate editor, will offer expertise in the burgeoning field of genomics, as well as insight into plant development and plant physiology. Jonathan D. G. Jones (Sainsbury Laboratory, Norwich, United Kingdom) is also making extensive use of genomics techniques in his own research into the mechanisms of plant disease resistance; his presence on the board will help to enhance the journal's excellence in these areas. Wolf B. Frommer's (Eberhard-Karls Universität, Tübingen, Germany) interests in molecular transport, membrane function, genetics, and physiology will be invaluable as these areas continue to expand, and Sarah (Sally) M. Assmann's (Pennsylvania State University, University Park) mastery of the tools of electrophysiology will help enormously as the number of submitted papers that rely on these techniques to explore questions of membrane function and cellular-signaling pathways continues to increase.

In addition to maintaining our emphasis on publishing cutting-edge plant science research, under my direction THE PLANT CELL will also be implementing a number of new formats aimed at expanding the scope of the front section of the journal. These are expected to include editorials or commentaries that provide perspectives on newly emerging areas, themes, or models or that discuss policy debates and issues of interest to our readership. As always, we will deeply appreciate your willingness to help out when we invite you to make contributions along these lines and welcome your comments or suggestions aimed at keeping THE PLANT CELL at the forefront of plant science communications.

Clearly, it is you, our authors, reviewers, and readers, who are ultimately responsible for the quality of this journal. You submit your best work to THE PLANT CELL and you offer constructive but critical reviews of the contributions of your colleagues. The editorial board greatly appreciates your efforts, and we will continue to expect the highest possible standards. Keep up the good work!

Ralph S. Quatrano
Department of Biology
Campus Box 1137
Washington University
St. Louis, MO 63130-4899
rsq@wustl.edu

A version of this letter from the Editor originally appeared in the July 1998 issue of THE PLANT CELL.

ASPP–Epcot Exhibits Extend Plant Science Awareness

The ASPP Education Foundation exhibit fostered plant science education at both the Science Jam at the Epcot Center, March 13–April 4, and the International Flower and Garden Festival, April 17–May 31.

Science Jam presentations were made in colorful tents where children could explore hands-on activities. Five times each day, two Disney-trained plant science college graduates gave interactive presentations. For example, the exhibit "How to Build a Sunflower" offered participants the chance to "shoot" DNA into a plant to increase its size, illustrating how new genes allow scientists to improve plants. Visitors were also reminded that crops have been improving for 10,000 years and that gardeners practice seed selection.

A Plexiglas box exhibit that contained two potato plants demonstrated the genetically improved plant's superior resistance to the Colorado potato beetle. Healthy *Bt* engineered corn growing near the tent was compared with unprotected corn exposed to the European corn bore. The "Wheel of Nutrition" display demonstrated the benefits of fruits and vegetables, naming key compounds such as lycopene in tomatoes and anthocyanin in carrots.

The communicators answered questions in between presentations, and visitors explored several other activities and saw genetically improved plants in the adjacent ASPP garden.

The International Flower and Garden Festival continued the focus on the critical role that plants provide in feeding the world of the 21st century. Visitors learned of advances in plant research, which include increased food production and improved food quality, as well as the reduced condition of malnutrition in many parts of the world. They also discovered that the "Green Revolution" helped Asia and Latin America achieve agricultural self-sufficiency and that as developing nations acquire wealth and need more money to feed their growing populations, there is a need for a second Green Revolution to meet the projected demand for food in the 21st century.

Plant scientists are using basic plant research and plant biotechnology to initiate this revolution. This speeds up and improves traditional plant-breeding techniques to develop crops that are resistant to diseases, pests, drought, and other severe climate conditions. Plant scientists also use biotechnology to develop more nutritious foods, higher yielding grains, and better quality fruits and vegetables. Visitors were informed that plants developed through the use of biotechnology meet federal requirements for safety and nutrition, and the advances in pharmaceuticals, biofuels, and clean air and water were emphasized.

ASPP is making available an eight-minute video of the exhibit for use by school teachers, students, and the ASPP membership as well as a video release. Please contact the ASPP Education Foundation at asppef@aspp.org to obtain a copy of the video.

ASPP Education Foundation Board Meets in Minneapolis

The board of directors of the ASPP Education Foundation met April 14–15, 1998, in Minneapolis. Ed Shonsey, president and CEO of Novartis Seeds, and some of his staff hosted the meeting and treated board members to a tour of Novartis.

Epcot Exhibit

ASPP board members all agree that the ASPP Education Foundation exhibit at the Epcot Center Science Jam March 13–April 4 and International Flower and Garden Festival April 17–May 31 was successful in reaching the target audience. (See related story above.) Visitors learned of exciting new plant products made possible through basic plant research. Interactive presentations and hands-on activities at the site, which featured a large garden, food market, and activity centers, reinforced the message.

Education Reform

Principles of Plant Biology—Concepts for Science Education have been approved by the ASPP Education Committee and presented at the annual meetings of the Association of State Science Supervisors (ASSS) and the National Science Teachers Association (NSTA), as well as at a workshop of the Coalition for Education in the Life Sciences (CELS). Former committee member Bob Buchanan will be teaching a course on the principles this fall at the University of California, Berkeley. Committee chair John Markwell has written comments on behalf of ASPP urging consideration of the principles in the California First Draft Content Standards for Science. The development of educational materials related to the principles will help teachers implement the principles into curricula and classroom teaching. Paul Williams at Wisconsin Fast Plants (WFP) has discussed working them into WFP workshops on teaching techniques.

Foundation Progress

The ASPP Education Foundation board clarified the history, purpose, activities, and direction of the foundation. Initially conceived as a source of revenue for Society activities, the foundation emerged as an arm for public outreach and education. Cooperative activities to date include the Epcot exhibit; the development of briefing papers describing key issues in plant science and the benefits of plant science to society; the focus study and analysis of K–12 science curricula and standards; the creation, development, and dissemination of the *Principles of Plant Biology—Concepts for Science Education;* collaboration with other organizations in educational conferences and workshops; and Web publication of plant science educational materials through the ASPP homepage (http://aspp.org).

Board members voiced various considerations for focus and framework of foundation activity. They agreed on the need to create and define the mechanisms through which ideas can be presented, selected, funded, and marketed. The ASPP Education Foundation has the opportunity to step out and declare the age of biotechnology through the expertise and work of ASPP members. It is uniquely positioned to foster the broad vision of plant science and biotechnology in the 21st century.

Judy Grollman Sets Sail

Judy Grollman with former Editor of THE PLANT CELL and ASPP President-Elect Brian Larkins at the Society's 1997 annual meeting in Vancouver, B.C.

Judith Grollman, managing editor of THE PLANT CELL since its inception 10 years ago, resigned from ASPP effective July 17. Assuming her position in September 1988, when the journal was still in its planning stages, Judy brought the first issue off press in January 1989 and over the next decade dedicated herself to making the journal the premier plant science journal in the world today. At the end of its first year, THE PLANT CELL had published 1,200 pages; in 1997, that number was 2,400.

During her tenure as managing editor, Judy devoted herself to her colleagues as well as to the journal. "The most important part of this experience has been the people. Sharing in the growth and development of my staff and acting as mentor to them has been most rewarding," she said.

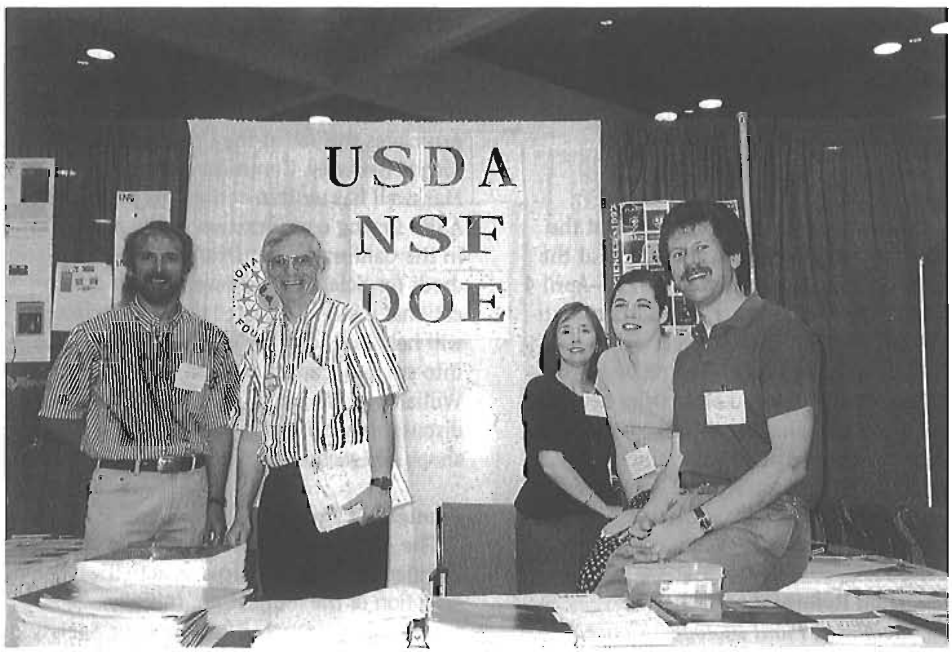
Another highlight has been the opportunity to serve two strong, creative editors-in-chief and their outstanding editorial boards. "I'm really proud of my role in developing this fantastic product—the journal—which is so valuable to students and researchers in plant biology. It's been like working on a lasting gift."

Crispin Taylor succeeds Judy as managing editor. "Crispin is the perfect choice . . . he and [new editor-in-chief] Ralph Quatrano are a terrific team to lead THE PLANT CELL into the 21st century. I remember that when I came to the Society 10 years ago, I was preparing all my decision letters on a typewriter. I recall when ASPP purchased its first fax machine and its first computer. I remember when we first began to use e-mail. Now we're online with HighWire Press, and Crispin has ambitious plans to fully automate the management and administration of the journal."

So what's next for Judy? Apparently to get as far away as possible—via a cruise to Greece and Turkey later this summer. Don't worry, Judy . . . that'll be a sunset you see out there on the horizon, not the specter of some looming production deadline! We'll miss you!

Plant Biology '98—Largest Meeting for Monona Terrace Convention Center

Plant Biology '98, the ASPP annual meeting, was held at the end of June in Madison, Wisconsin, at the new Monona Terrace Convention Center, designed by Frank Lloyd Wright. Total registration for the ASPP meeting topped 1,300. The combined symposia on Saturday, June 27, and Sunday, June 28, with the 9th International Conference on Arabidopsis Research pushed the attendance to over 1,800, resulting in standing-room-only crowds and the largest meeting that has been held to date at the convention center. Further details and feedback on the new meeting format will be highlighted in the September/October issue of the *ASPP NEWS*.



The combined USDA, NSF, and DOE exhibit at the ASPP annual meeting provided helpful information on research programs supporting plant research. From left are Robert Spreitzer, Committee on Public Affairs Chair Lou Sherman, Anne Richeson, Sarah Zielinski, and Bob MacDonald.

From Plant Biology '98, Madison, Wisconsin. . .

The popular Education Booth sponsored by the ASPP Education Committee included the interactive C-fern exhibit. Les Hickok (left) discusses his C-fern exhibit with Elliot Munsanje.

(L-R) Brian Larkins, ASPP president-elect, Nancy Winchester, director of publications, Susan Chambers, director of finance and administration, and Judy Grollman, former managing editor of THE PLANT CELL, at Plant Biology '98.

Senator Bond Seeks $50 Million for Plant Genome Research Senate Appropriations

Subcommittee on VA, HUD and Independent Agencies Chair Christopher (Kit) Bond (R-MO) and the full Appropriations Committee increased their recommendation for NSF-supported plant genome research by $10 million to a total of $50 million in the fiscal year 1999 budget. Bond, who led the efforts for the increase, had earlier authored the initial $40 million appropriation for NSF-sponsored plant genome research in the enacted FY98 spending bill.

During discussion of the spending bill, Bond noted that the plant genome provision has been supported by "outstanding scientists such as Mary Clutter at the National Science Foundation." He further noted that plant genomic research has many positive implications, including protection of the environment. Senator Tom Harkin (D-IA) supported the provision of $50 million for plant genome research and cited its potential for improving the nutritional value of food and addressing environmental concerns. He was joined by ranking Democrat Barbara Mikulski (D-MD), who said plant genomic research will lead to "disease-resistant agriculture."

The committee is recommending a total FY99 appropriation of $3.644 billion, which is $215 million or 6.3 percent more than the FY98 level. Although this amount is some $129 million less than the president's request for NSF, that request was based on revenues from a new source—proposed tobacco tax increases. Hopes for tobacco tax legislation appear to be fading in this Congress.

For NSF research and related activities, the committee is recommending an appropriation of $2.725 billion, an increase of $179 million over the FY98 level but $122 million less than the amount requested for FY99. Within the appropriation for the research account, the committee makes the following changes to the request:

- an additional $10 million to enhance NSF's ongoing plant genome research
- an additional $24 million for Arctic logistics support
- an additional $6 million for information technology research centers under Knowledge and Distributed Intelligence (KDI).
- an additional $12 million for more science and technology centers in applied molecular biology
- an additional $2 million for historically black colleges and undergraduate (HBCU) institutions.

For the Major Research Equipment appropriations, the Senate committee is recommending the budget request of $94 million; however, the committee has specifically denied funds for the Polar Cap Observatory.

For Education and Human Resources, the committee has provided the budget request of $683 million but makes the following changes to the budget request:

- an additional $10 million for the Experimental Program to Stimulate Competitive Research (EPSCOR)
- an additional $10 million for informal science education
- an additional $6 million for HBCU undergraduate support.

The Senate committee has elected to freeze the Salaries and Expenses account at the FY98 level of $137 million. The Office of Inspector General is funded at the requested level of $5.2 million.

House Committee Action on NSF

On June 25, the full House Appropriations Committee marked up and reported its version of the FY99 VA, HUD and Independent Agencies appropriations bill. The bill included the full $40 million funding for the NSF request for plant genome research.

During consideration of the bill, Representatives Rodney Frelinghuysen (R-NJ) and Mark Neumann (R-WI) successfully offered an amendment to increase the ceiling on loans made by the Federal Housing Administration. As part of this amendment, an additional $70 million was added to NSF research and related activities and an additional $10 million was added to VA medical research.

The effect of this successful amendment is a House bill that seeks to provide NSF with a total FY99 appropriation of $3.697 billion. This is $268 million or 8 percent more than the FY98 level.

For research and related activities, the committee recommends $2.815 billion, $269 million more than the FY98 level. Within this appropriation, the committee would hold funding for earth sciences, ocean sciences, and atmospheric sciences at no less than their FY99 request levels of $106 million, $230 million, and $170 million, respectively.

For Major Research Equipment, the committee is recommending $90 million.

For Education and Human Resources, the committee is providing a total of $642.5 million. Within this account the committee added $5 million to the request for informal science education and $7.5 million for continuation of a minority graduate education activity.

For both the Salaries and Expenses and the Office of Inspector General accounts, the House committee provided the budget requests of $144 million and $5.2 million, respectively. The Senate bill proposes to cut the Salaries and Expenses account by $7 million from the request level of $144 million.

Full Senate consideration of the appropriations bill has begun, but as of July 13, action had not yet been completed and the bill had not yet reached the House floor. A decision on supporting $50 million versus $40 million for plant genome research may be reached in the eventual House/Senate Conference. Support from ASPP Campus Contacts will be needed to seek acceptance of the Senate recommendation for $50 million for plant genome research.

DOE Research Spending Typo Corrected; Further Battles Remain

In reviewing the Senate Appropriations Subcommittee on Energy and Water Development Report for FY99, ASPP discovered that no dollars were shown as being requested by the Department of Energy or recommended by the Committee for the Division of Energy Biosciences. It appeared that the numbers were misaligned for divisions within Basic Energy Sciences and that the wrong amount was next to three divisions, including the Division of Energy Biosciences.

ASPP met a few minutes later with subcommittee staff and explained that there appeared to be a typographical misalignment due in part to the fact that there was a new division shown in Basic Energy Sciences this year. Subcommittee staff reviewed the information and informed us the same afternoon that a correction would be made and that the recommendation for the DOE Division of Energy Biosciences would be $32.489 million, an increase of more than 18 percent compared to FY98.

Printing errors and other mistakes sometimes occur in legislation as with other printed materials. However, if Congress passes a bill with a misprint, the misprint is law. Interests affected by an enacted mistake can seek a technical corrections bill, but technical corrections bills are not immediate solutions and are not always forthcoming. Effective committee staff action to correct the misalignment of numbers averts the need to seek a correction later, when it may be a more complicated process.

The Senate numbers look good for the Division of Energy Biosciences coming out of committee and as approved by the Senate. However, there are further challenges in the House. ASPP Campus Contacts in key districts of members of Congress on the Appropriations Subcommittee for Energy and Water Development are urging members to protect the Division of Energy Biosciences from an effort by the Consortium for Plant Biotechnology Research to take $2.5 million from the division. The issue is expected to be resolved in an eventual House/Senate conference.

Representative Scott Klug (R-WI) toured the Agracetus Campus of Monsanto as a guest of Committee on Public Affairs member Rob Horsch. Horsch also visited the offices of Senators Russ Feingold (D-WI) and Herbert Kohl (D-WI). Kohl is a conferee on the key appropriations bill for energy research (see story on bill at left).

ASPP Seeks Support for Plant Research and Peer Review in Initiative for Future Agriculture and Food Systems

ASPP advocated an emphasis on plant research for the Initiative for Future Agriculture and Food Systems during a USDA-sponsored stakeholders symposium July 9, 1998, in Washington, DC.

ASPP noted that enacted authorizing legislation containing the Initiative for Future Agriculture and Food Systems calls for research on critical emerging agricultural issues related to future food production, environmental protection, and farm income. Priority research areas established by Congress are food genome; food safety, food technology, and human nutrition; new and alternative uses and production of agricultural commodities and products; agricultural biotechnology; natural resource management including precision agriculture; and farm efficiency and profitability. ASPP noted that plant research relates to all of these priorities, including the food genome provision.

The food genome provision in the reauthorizing bill is defined as including plant genome, animal genome, and microbial genome research. ASPP commented that unlocking the secrets of important plant genomes will directly address critical emerging agricultural issues related to future food production, environmental protection, and farm income.

The White House–appointed National Science and Technology Council, Committee on Science, Interagency Working Group (IWG) on Plant Genomes called for an increased commitment to plant genome research in its January 1998 report titled "National Plant Genome Initiative."

ASPP noted that the IWG, as well as the Office of Management and Budget, recommends federal investment of at least $320 million more in plant genome research over the next five years. The IWG noted that the National Plant Genome Initiative could offer solutions to many of our nation's greatest challenges: "For example, the revitalization of rural America will come from a more robust agricultural sector; reductions in greenhouse gasses can be achieved from the production of plant biofuels for energy; chemically contaminated sites can be rehabilitated economically using selected plants; and world-wide malnutrition can be greatly reduced through the development of higher yielding and more nutritious crops that can be grown on marginal soil." Clearly, plant genome research relates directly to future food production, environmental protection, increased farm income, and new alternative crops.

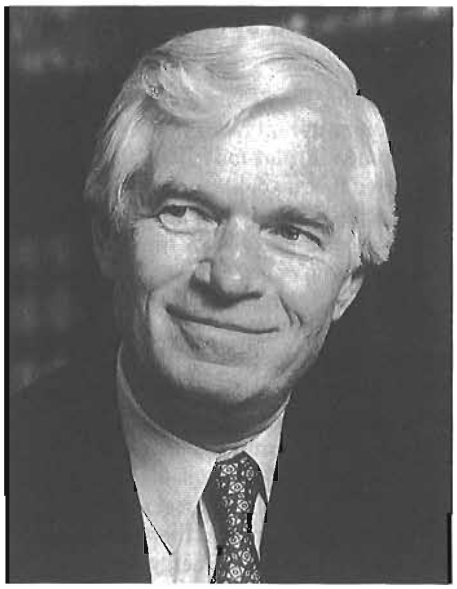
"Plant genomics research will complement use of modern transformation technologies in this age of biotechnology to better enable scientists to engineer enhanced plants," ASPP said. "The major priority area of agricultural biotechnology established by Congress offers some of the best opportunities for important advances in research. Crops that will be more resistant to drought, cold, and other severe weather conditions and naturally resistant to pests and disease will be part of American agriculture with support from the Initiative for Future Agriculture and Food Systems," ASPP added. Clearly, Congress is establishing priorities in research including plant genomics and modern plant transformation techniques to address the critical areas of future food production, protection of the environment, and increased farm income.

continued on page 10

continued from page 9

ASPP urged the U.S. Department of Agriculture to follow the model of the highly regarded National Research Initiative Competitive Grants Program in establishing peer review procedures for the selection of research proposals in the Initiative for Future Agriculture and Food Systems. This would be consistent with Section 103 of the reauthorization legislation. Only the most rigorous peer review procedures should be used in the Initiative for Future Agriculture and Food Systems to assure that the best research is funded. Review panels must be composed of scientists knowledgeable in the area of research they are reviewing for the review process to be meaningful, credible, and equivalent to the review procedures followed by other leading federal competitive research programs. Use of rigorous peer review and support for research in the priority areas designated by Congress should be expected to lead to continued strong support for the initiative by the science community, producers, and Congress. (Some interests want to see farmers and other nonscientists participating in reviews of proposals.)

The Initiative for Future Agriculture and Food Systems is a new competitive grants program that would provide $120 million a year over five years for agricultural research, education, and extension. The House Appropriations Committee would not fund the program, but the Senate Appropriations Committee supports funding of the new competitive grants program. ASPP Campus Contacts are seeking support for the Senate version.



Senator Thad Cochran (R-MS), chair of the Senate Appropriations Subcommittee on Agriculture, is key supporter of the Initiative for Future Agriculture and Food Systems. Committee on Public Affairs member Dawn Luthe conducted two visits with Senator Cochran's staff to support the initiative and other important USDA research programs.

Dr. Mary Clutter Sees Computers and Collaborations as Keys to Research in the Age of Biology

Dr. Mary Clutter, assistant director of the National Science Foundation (NSF) and head of the Biological Sciences Directorate, addressed the topic of biology research and education in the "age of biology" during the "Perspectives of Science Leaders" program held June 27 at the ASPP annual meeting in Madison, Wisconsin.

Dr. Clutter noted that research opportunities in biology are receiving more recognition in Washington, reminding the audience of President Clinton's comment in May 1997 that "if the last 50 years were the age of physics, the next 50 years will be the age of biology."

An increasingly key component in biological research is the computer, Dr. Clutter said. She predicted that sequence-based biology combined with database mining will revolutionize the biological sciences. Technology and informatics will transform all aspects of research and education, according to Dr. Clutter. She noted that information available in interrelational and interoperable databases will provide shortcuts to answers to important biological questions. Electronic communication allows collaborations unlimited by miles or continents. "Collaboratories," or networks of scientists, will be commonplace. "Two months in the lab can easily save an afternoon on the computer," Dr. Clutter quoted Alan Bleasby as saying.

In discussing the need to reshape the education of scientists and engineers, Dr. Clutter noted the findings of the Committee on Science Engineering and Policy, which said that a world of work that has become more interdisciplinary, collaborative, and global requires that we produce young people who are adaptable and flexible, as well as technically proficient. However, an NSF workshop on graduate education and postdoctoral training found that the skills and knowledge acquired by new Ph.D.s are too narrowly focused and not adequately applicable to the diverse business and industry environments in which most Ph.D. scientists actually work.

Dr. Clutter said that the classic method of undergraduate biology education is no longer sufficient. Rather, education in a research-rich environment is needed for all undergraduates, so as to develop a more broadly educated population.

Nearly one in four Ph.D. degrees and nearly one in five B.S. degrees awarded in science and engineering are in the life sciences. One-half of all B.S. degrees in the life sciences are now awarded to women. Nearly 40 percent of the Ph.D. degrees in the life sciences go to women. Women have shown gains in both categories in recent years.

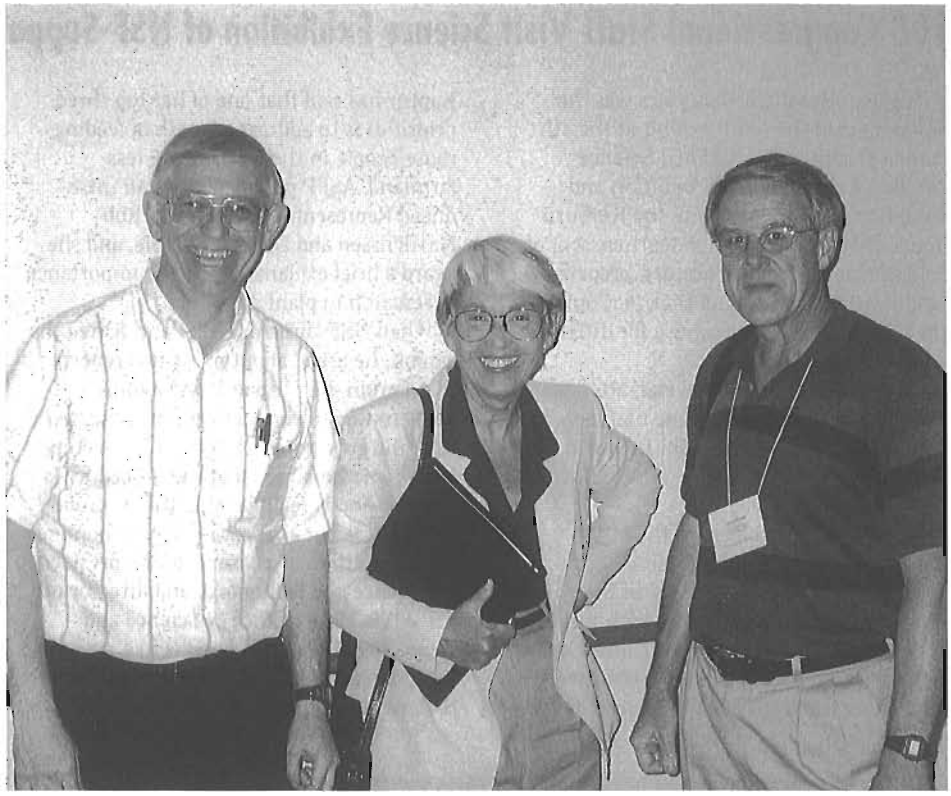
Underrepresented minorities earn little more than 10 percent of the B.S. degrees and about 4 percent of the Ph.D. degrees in the life sciences. About 4 percent of the tenured biology faculty are underrepresented minorities. Dr. Clutter cited current and future population projections, which demonstrate a need to attract more underrepresented minorities to study in the life sciences.

Dr. Clutter went on to note that it is the mission of the NSF Biological Sciences Directorate to support the vitality of the biological sciences at U.S. colleges and universities, especially in those areas where NSF has major responsibilities. For basic research in the nonhealth sciences, NSF supports 52 percent of the federally supported research. Fifty-seven percent ($130 million) of the federally supported competitive research conducted in plant biology in FY98 is supported by NSF. This figure is up from 47 percent in FY97 as a result of Senator Bond's successful sponsorship of the $40 million plant genome initiative.

Dr. Clutter said the goals of the plant genome research program include funding virtual centers that will be multi-institu-

tional collaboratories focused on the application of genomic information to fundamental biological questions relevant to economically valuable crops and on the production of plant-specific genomics tools, databases, and facilities. The plant genome initiative will make possible the complete sequencing of the Arabidopsis genome by the end of the year 2000. Dr. Clutter noted that a further goal is the coordination of all activities across federal agencies as part of the National Plant Genome Initiative.

In introducing Dr. Clutter to a standing-room-only crowd of plant scientists at Plant Biology '98, Lou Sherman, chair of the Committee on Public Affairs, noted that Dr. Clutter serves on and chairs a number of high-level committees and commissions in Washington. Dr. Clutter is highly respected by her colleagues within NSF and at other federal research agencies. She is held in very high regard at the White House and by key committees in Congress. As just one example, "Senator Christopher Bond (R-MO) specifically seeks out the advice of Dr. Clutter at congressional hearings and in consideration of research initiatives for NSF such as the plant genome initiative," Dr. Sherman said. "Dr. Clutter has earned her stellar reputation in Washington and within the science community through her years of effective, forthright, and honest work with everyone [with whom] she comes into contact."



Dr. Mary Clutter was the featured speaker at the "Perspectives of Science Leaders" program at the ASPP annual meeting. Committee on Public Affairs Chair Lou Sherman (left) and Board of Trustees Chair Doug Randall thanked Dr. Clutter for her insightful presentation and for her outstanding contributions to basic biology research.

Coalition Advertisement Supports Research Using Plant Biotechnology

CoFARM—The Coalition on Funding Agricultural Research Missions (composed of 20 science societies)—and the 120-member Agricultural Research Institute (ARI) asked ASPP to develop an advertisement explaining the benefits of research using biotechnology to develop enhanced crops.

In response, ASPP wrote an ad called "Seeds for Survival," which appeared in the May 11 and 12 (Monday and Tuesday), 1998, issues of the *CQ Daily Monitor*. Timing of the ad worked well, because the Senate was considering the conference report on the Agricultural Research Reauthorization bill both those days.

The circulation of the *CQ Daily Monitor* on Mondays is 5,255, and on Tuesdays through Fridays it is 3,677. On Tuesdays through Fridays, 993 subscriptions go to Capitol Hill; 621 to other federal government offices; 1,902 to associations and lobbyists; and 161 to the media. The Monday bonus circulation adds 928 subscriptions to government offices and another 579 subscriptions to organizations and the media.

Advertising in the *CQ Daily Monitor* is a way to reach a select readership of congressional and executive branch offices, as well as national media covering Capitol Hill. The *CQ Daily Monitor* also reaches the public affairs offices of associations representing a broad spectrum of membership ranging from major business industries to consumer interest groups. Cost of advertising in the *CQ Daily Monitor* is far less than in other publications that also reach these audiences.

The listing of science societies supporting the ad demonstrates to readers, including those in the national media, the recognition in the agricultural sciences community of the need to support plant research using biotechnology. Inclusion of the description of ARI shows the support for this research by representatives from industry, academia, government, and public-interest sectors.

100 Congressional Staff Visit Science Exhibition of NSF-Supported Research

Comparative Plant Genomics was the subject of the ASPP exhibit at the 4th Annual Coalition for National Science Funding Congressional Exhibition and Reception held on May 20 in the Rayburn House Office Building. Rob Martienssen, of Cold Spring Harbor Laboratory, prepared the exhibit with his colleague Dick McCombie. They also prepared a brochure for distribution at the exhibit.

Nearly 100 congressional staff attended the exhibition along with nine members of Congress. NSF officials Machi Dilworth, DeLill Nasser, Karen Kindle, and Judith Verbeke also attended.

One of the first visitors to the ASPP exhibit was Representative Marcy Kaptur (D-OH), one of five Democrats on the Appropriations Subcommittee with jurisdiction over spending for NSF and also the ranking Democrat on the subcommittee controlling funds for USDA. Representative Kaptur has said that one of her top three priorities is to address the task of feeding more people in the world using less farmland. ASPP public affairs staff introduced Representative Kaptur to Rob Martienssen and Dick McCombie, and she heard a brief explanation on the importance of research in plant genomics.

When NSF Director Neal Lane visited the exhibit, he asked about published reports that Perkin–Elmer had found a more efficient way to conduct genome sequencing than the government has been supporting. McCombie explained that the procedure is not new and is really a "skimming" procedure that is not as accurate. As the nominee for the position of assistant to the president for science and technology and director of the White House Office of Science and Technology Policy, Dr. Lane is in a position to significantly influence support for research initiatives.

Director of the National Science Foundation Neal Lane (right) discusses plant genome research at the ASPP congressional exhibit with Rob Martienssen (center) and Dick McCombie of Cold Spring Harbor Laboratory.

Benjamin Wu (left), a House Science Committee staff member, examines corn used years earlier in the Nobel Prize–winning work of Barbara McClintock. Rob Martienssen (center) and Dick McCombie prepared an exhibit on comparative plant genomics for ASPP as part of a well-attended congressional exhibition May 20.

ASPP Education Forum

Compiled and edited by Bob Wise, Department of Biology, University of Wisconsin–Oshkosh, Oshkosh, WI 54901, e-mail wise@uwosh.edu

Report Blasts Research Universities for Poor Teaching of Undergraduates
By Robin Wilson

The following article originally appeared in the April 24, 1998, issue of The Chronicle of Higher Education, *copyright 1998, The Chronicle of Higher Education. It is reprinted here with permission.*

A commission created by the Carnegie Foundation for the Advancement of Teaching has issued one of the harshest indictments yet of undergraduate education at research universities. What's unclear is whether the report will make a difference, or simply be added to the pile of documents already written on the subject.

Despite years of hand wringing by educators and legislators, not much has been done to change the fact that teaching takes a backseat to research at large universities, says the report, "Reinventing Undergraduate Education: A Blueprint for America's Research Universities."

"Universities are guilty of an advertising practice they would condemn in the commercial world," the report says. "Recruitment materials display proudly the world-famous professors, the splendid facilities and the ground-breaking research that goes on within them, but thousands of students graduate without ever seeing the world-famous professors or tasting genuine research."

It adds: "Baccalaureate students are the second-class citizens who are allowed to pay taxes but are barred from voting, the guests at the banquet who pay their share of the tab but are given leftovers."

Several institutions, including the Massachusetts Institute of Technology, Rensselaer Polytechnic Institute, and the University of Iowa, have experimented over the years with ways to elevate the status of teaching, making research institutions friendlier to undergraduates. They have turned some large lectures into smaller discussion classes, linked undergraduates with prominent professors for one-on-one work, and established institutes to help professors and graduate students refine their teaching skills. But few of the innovations have changed the way research institutions do business, says the commission: "Universities have opted for cosmetic surgery, taking a nip here and a tuck there, when radical reconstruction is called for."

The report, released this week, was put out by an 11-member panel formed in 1995 by the Carnegie Foundation and the State University of New York at Stony Brook. Ernest L. Boyer, Carnegie's past president, attended the commission's first meeting in July 1995 but died five months later, before it finished its work. The panel, which named itself the Boyer Commission in his honor, is headed by Shirley Strum Kenny, president of Stony Brook.

Ms. Kenny says Mr. Boyer saw the report on undergraduate education as a successor to two previous reports—"Scholarship Reconsidered" and "Scholarship Assessed"—that Carnegie had completed during the 1990s. Both of those reports urged professors at research universities to put teaching on a par with research. The two reports said the definition of scholarship should be broadened to include teaching, and suggested that teaching be held to the same standards of evaluation as research.

The new report is concerned with undergraduate education at the nation's 125 research institutions. It sets out an "Academic Bill of Rights"—elements of a quality education that every undergraduate at a research university should be guaranteed. Students, it says, should have the opportunity to "work with talented senior researchers" and have "access to first-class facilities in which to pursue research."

The report also suggests "Ten Ways to Change Undergraduate Education" on research campuses. Research universities, the report says, should not attempt to duplicate the kind of education offered at small, liberal-arts colleges. Rather, they should take advantage of their research dimension and "bring undergraduates into the big tent." Undergraduates should be included in research endeavors, which are now primarily the province of professors and their graduate students, the report says. Undergraduates should be made part of research teams, and traditional lecture courses should be restructured to promote "inquiry-based learning," in which students explore a topic in much the same way that a researcher approaches scholarly work.

To insure that they can meet the demands of this approach, the report says, freshmen should complete any necessary remedial work before entering a research university. "For a research university to devote a large portion of its faculty time and its facilities to prepare students for university study represents a dissipation of increasingly scarce resources," it says.

The commission also urges institutions to create shared experiences for freshmen, offering them small seminar courses during their first semester and building on those classes by grouping freshmen together in subsequent courses. The report says universities must make sure that undergraduates can write for a lay audience, rather than produce prose that appeals only to the intellectual sensibilities of professors. And it makes a variety of other recommendations, urging institutions to establish a "capstone" course for seniors that brings together important concepts they have learned in their undergraduate years. It also suggests providing better training for graduate students—who teach the bulk of undergraduate courses—and changing the rewards system for faculty members to promote attention to undergraduate learning.

This is not the first time such recommendations have been made, and the commission is not the first group to bemoan the state of undergraduate education. "For 30 years, universities have been saying that we've got to fix the problem of undergraduate education, and we have done a lot of interesting things. But the core has not changed," says Ms. Kenny, the head of the commission. "These things never became part of the real value system of research universities, and it's really time to do something about it." She hopes that the report will now at least "shape the debate" on the subject.

But experts disagree over whether the report will have much influence. Arthur E. Levine, president of Teachers College at Columbia University, thinks it will. "Right now, research universities are being shaken," he says. Institutions are having a harder time placing Ph.D. recipients in academic jobs and are being forced to pay more attention to the real bread and butter: undergraduates.

"Private research universities are expensive, and places like community colleges are going to become real competitors," says Mr. Levine. "If research universities hope to maintain their enrollments, they have to offer programs that respond to undergraduates in more congenial environments." Perhaps, he says, "this is not a bad time to issue a report." But Ted Marchese, vice-president of the American Association for Higher Education, is not so sure. Conditions have improved for universities, and the pressure to change has eased, he says. "The

public and the legislature are not on their backs as much, and state appropriations are up over the last two years. The net result is that the perceived pressures to do something fundamentally better with undergraduates have lessened a bit."

In addition to Ms. Kenny, members of the Boyer Commission are Bruce Alberts, president of the National Academy of Sciences; Wayne Booth, a professor emeritus of English and rhetoric at the University of Chicago; Milton Glaser, a graphic artist and designer; Charles Glassick, a senior associate at the Carnegie Foundation; Stanley Ikenberry, president of the American Council on Education; Kathleen Hall Jamieson, dean of the Annenberg School of Communication at the University of Pennsylvania; Robert O'Neil, a professor of law at the University of Virginia; Carolynn Reid-Wallace, senior vice-president for education and programming at the Corporation for Public Broadcasting; Chang-Lin Tien, chancellor emeritus and a professor of engineering at the University of California at Berkeley; and Chen Ning Yang, a professor of physics at Stony Brook.

Copies of the report are available free from Mary Leming, Office of the President, SUNY–Stony Brook, Stony Brook, N.Y. 11794; or by e-mail (mleming@notes.cc.sunysb.edu). The report also will soon be posted on a World-Wide Web site (http://www.sunysb.edu/boyerreport).

Advisor, Teacher, Role Model, Friend. On Being a Mentor to Students in Science and Engineering

A report from the Committee on Science, Engineering, and Public Policy, a joint committee of the National Academy of Sciences, the National Academy of Engineering, and the Institute of Medicine under the auspices of the National Research Council. ISBN 0-309-06363-9; 1997, 5 ½ x 8 ½ inches, 84 pages, softcover. Reviewed by Bob Wise

This guide on mentoring is a follow-up to a 1995 National Research Council (NRC) publication entitled "Reshaping the Graduate Education of Scientists and Engineers," which called for changes in the way graduate students are prepared for today's job market. The earlier publication called, in particular, for a broadening of graduate education so that students are exposed to the variety of employment options beyond the job held by their doctoral adviser. The 1997 handbook attempts to provide guidance and advice for the adviser half of the student/adviser relationship.

The various sections are entitled (1) "What Is a Mentor?", (2) "The Mentor as a Faculty Advisor," "Career Advisor," "Skills Consultant," and "Role Model," and (3) "Recommendation: Improving the Quality of Mentoring." Although there are several small parts on undergraduate mentoring, most of the guide, both in content and tone, focuses on graduate mentoring at the Ph.D. level.

Much of the information is common sense, such as the statements that "An effective mentoring relationship is characterized by mutual respect, understanding, and empathy" (p. 2) and that "The most direct way for institutions to improve the quality of mentoring is to award good mentoring" (p. 65). However, the very fact that the NRC identified the need for such a handbook points out that such common sense advice is often not followed.

Overall, this is a useful guide that all advisers should read. It contains little that is novel or earth-shaking, but having all of it in one place and easily accessible is a valuable contribution. (Perhaps a copy should be issued to every graduate student so he or she can slip it under their advisers' door late at night!)

The full text is online from the National Academy Press at http://www.nap.edu/readingroom/books/mentor. Hard copies may be purchased for $4.95 to $7.95 per copy, depending on the number of copies ordered (call 800-624-6242 or visit http://www.nap.edu/readingroom to order).

Enhancing the Pub(lic) Understanding of Science

David Walker (ASPP corresponding member, Sheffield, England) and colleague Mic Rolph (a professional illustrator) are involved in an educational project to promote public awareness of plants, science, and the environment. Part of a larger national strategy in the United Kingdom, the idea is to introduce 30 beer mats ("coasters" on this side of the pond) into about 50 selected pubs in England. The coasters will have a question on one side that pertains to plant biology or the environment and an appropriate illustration on the other. Tavern patrons will be challenged to answer the questions as they partake of the malted fare. Dr. Walker recently posted 33 sample questions (without answers—but that shouldn't bother us) to the Plant Ed Newsgroup and asked for input and suggestions; he may be contacted at david@alegba.demon.co.uk. The entire list can be found on the Plant Ed Archives for June 2, 1998. Your Education Forum editor has applied to the Society for funding to investigate this innovative plant science education project first-hand. Some selected questions are—

- Gardeners on radio programmes often talk about "feeding plants," but, in reality, green plants get 95% or more of their "food" from the air rather than from the soil.

True or false?

- Brewers use yeast to make alcohol. Bakers use yeast to make their bread rise. If a baker put his mind to it, might he recover a little alcohol from the steam that rises from his baking bread? **Yes or no?**
- Seemingly the "greenhouse effect" is not such a bad thing after all. If it were not for the greenhouse effect, global temperatures would be (a) –180°C, (b) –80°C, or (c) +50°C?
- "Hops and turkeys, carps and beer, came into England all in a year" (quoted by Isaac Walton in *The Complete Angler*, 1653). Hops are used (a) to make beer bitter, (b) to increase its alcohol content, or (c) to preserve it?

ASPP NEWS

welcomes comments on topics covered in the newsletter and on other points of interest to the profession. Letters are published as space permits and may be edited for clarity and length. Submissions may not necessarily be published; receipt is not acknowledged. Mail letters to Editor, ASPP NEWS, 15501 Monona Drive, Rockville, MD 20855-2768 USA; e-mail: nancyw@aspp.org.

NEASPP MEETING HAS NEW FEATURES THIS YEAR

The 62nd annual meeting of the Northeast Section of ASPP (NEASPP) was held Friday and Saturday, May 1 and 2, 1998, at the University of Massachusetts, Amherst. More than 170 people attended, presenting 55 posters and platform talks. Some new features were also added this year. For example, the Howard Hughes Medical Institute provided support for 12 high school biology teachers, who arrived in time for Russell Jones's symposium talk Friday afternoon. Russell managed to gear his talk to an audience of many different backgrounds so that everyone could appreciate the sophistication of his methods and the implications of his results.

The teachers were also treated to a special program after the banquet that included several short presentations of lab projects suitable for a high school classroom. These included Dave Hodgson's "peas in bondage," embryo culture by Bill Pietraface, and purification of "essence of cauliflower" by Will Terzaghi. Mary Musgrave, visiting from Louisiana State University, talked about the involvement of high school classes in plant experiments on a recent space shuttle and showed a videotape of students trying to pollinate fast plants in microgravity.

Another new feature of the meeting was the free ASPP memberships awarded to three graduate students. Students filled out forms when they registered, and after the banquet three names were drawn at random by professors emeriti Marty Gibbs, Art Galston, and Bruce Stowe. The memberships, which are worth $30 each, were greatly appreciated, and the lucky winners were heartily applauded.

This year, the NEASPP meeting was further enhanced by the ASPP-sponsored symposium on plant stress that was held under the auspices of the National Academy of Sciences. Many of the meeting attendees remained for the symposium on the afternoon of May 2nd and were treated to a series of talks that complemented the NEASPP presentations. Special thanks to Hans Kende for selecting the University of Massachusetts as a site for this symposium and for choosing a date that coincided with the NEASPP meeting.

As usual, the sectional meeting provides a forum for the exchange of ideas and the establishment of collaborations between plant biologists who might be considered neighbors. The meeting also allows students to present their data in smaller, congenial surroundings. In fact, student participation is encouraged, and the cost of their attendance is allayed by grants from the Hillman–Granick Travel Fund. This year's meeting was organized by Bernie Rubinstein. Rakesh and Subhash Minocha, of the University of New Hampshire, will be in charge next year, and at least four more eager hosts have signed on for the coming years.

Dave Hodgson (Adirondack Community College) makes a point about subjecting peas to bondage.

ASPP Says Farewell to Aphrodite Knoop

Aphrodite Knoop, who joined the staff of ASPP in April 1995, resigned from her position as manuscript assistant in mid-July.

Aphro joins the staff of United Educators, part of the United Management Insurance Company, as research editorial assistant. Her responsibilities will include research, writing, and editing for newsletters and other publications designed to "educate the educators" on risk management. As one of the manuscript tracking assistants for *Plant Physiology,* Aphro served the Society, the journal, the editors, and the authors well as she promptly and accurately monitored the daily submissions to the journal and steadfastly contacted the scientists involved in the peer review process.

ASPP SPONSORS NATIONAL ACADEMY SYMPOSIUM ON PLANT STRESS

On May 2, 1998, The University of Massachusetts, Amherst, hosted a symposium entitled "Frontiers in Plant Biology: Plant Diseases, Pests, and Defense Mechanisms." The symposium, supported by ASPP and under the auspices of the National Academy of Sciences, was created and moderated by Hans Kende. The speakers were Frederick Ausubel, Ilya Raskin, Anne Simon, and Gregg Howe. Peter Hepler, head of the Plant Biology Graduate Program at the University of Massachusetts, introduced University of Massachusetts Chancellor David Scott, who presented the opening welcome.

Over 225 people attended the symposium, more than half of whom had been at the meeting of the Northeast Section of ASPP and were from outside the Amherst area. The audience offered a fine mix of backgrounds: About one-third were faculty; one-third were graduate students; a fifth were undergraduates; and the remainder were staff members, high school teachers, administrators, and others wanting to learn about advances in plant science. The questions that followed each 30-minute talk were incisive, and the discussion at the end showed that the audience appreciated the presentations and wanted to learn more. Many of the conversations continued at the reception held afterward.

Audience feedback indicated that the symposium met its goal of presenting some of the newest and most exciting advances in the area of plant stress at a level that could be appreciated by those with varied backgrounds in biology. The symposium also provided a forum for Chancellor Scott to announce the establishment of a $1.5 million endowed chair in the Plant Biology Graduate Program at the University of Massachusetts (see story below).

Participants in the gala plant biology weekend at U-Mass (from left to right): Peter Hepler (director, Plant Biology, U-Mass, and first recipient of Gilgut endowed chair), Bernie Rubinstein (organizer of NEASPP and co-organizer of NAS/ASPP), Hans Kende (co-organizer of NAS/ASPP and moderator for NAS/ASPP), Ilya Raskin (speaker for NAS/ASPP), Frederick Ausubel (speaker for NAS/ASPP), Gregg Howe (speaker for NAS/ASPP), and Russell Jones (symposium speaker for NEASPP). Missing is Anne Simon (speaker for NAS/ASPP).

ENDOWED CHAIR IN PLANT BIOLOGY DONATED TO UNIVERSITY OF MASSACHUSETTS

In a move that will boost the profile of plant research, teaching, and outreach throughout the country, a chair has been established at the University of Massachusetts in the Plant Biology Graduate Program (PBGP), an interdepartmental program. The chair will be named in honor of Dr. Constantine Gilgut, a retired University of Massachusetts professor of botany and plant pathology, and it will be funded by Dr. Gilgut's family. Peter Hepler, PBGP director and a member of ASPP, will be the first professor named to the chair. The endowment will also provide funds for PBGP students.

Chancellor David Scott announced the endowed chair on May 2, 1998, at the National Academy of Sciences symposium on plant stress, which was funded by ASPP. Dr. Gilgut and his wife and family were in attendance and were warmly applauded.

Dr. Constantine Gilgut and his wife, Marie. Dr. Gilgut's family honored him by endowing a chair in the Plant Biology Graduate Program at U-Mass.

WSSA UNDERGRADUATE RESEARCH AWARD

The Weed Science Society of America has developed an Undergraduate Student Research Grant designed to encourage and involve exceptional undergraduates in agricultural research. Interested faculty members are encouraged to identify potential award candidates and discuss the possibility of sponsoring a research project. Awards may be used as a stipend, for research budget expenses (travel, supplies, etc.), to defer fees, to defray living expenses for summer research, or any combination of these items.

AWARD: Up to $1000 for support of undergraduate research to be conducted over a minimum of one quarter/semester during 1999. This award may be used to defray the cost of research supplies or as a stipend. Support of a faculty sponsor is required. Awards will be made to the student, to be administered by the faculty sponsor's department.

APPLICANT: The applicant is an undergraduate student with a strong interest in Weed Science. Students majoring in all related disciplines may apply.

TO APPLY: Applicants should prepare a 2-3 page research proposal including name, phone number, title, objective, experimental approach, discussion, budget and references. The discussion section of the proposal should describe the expected results and their possible significance to Weed Science. The student should provide a cover letter in which general academic and career goals are discussed. A copy of the student's academic transcripts should also be provided.

FACULTY SPONSOR: Any faculty member who is actively engaged in Weed Science research is qualified to be a sponsor. The faculty sponsor should review the research proposal with special attention to the budget; the distribution of funds should be approved by both the student and sponsor. In addition, the sponsor should provide a letter of reference including a statement of his/her willingness to supervise the proposed research and to provide needed space, equipment and supplies above those requested in the proposal. The sponsor is encouraged to assist the student in presenting his/her results at a regional Weed Science Meeting.

HOW TO APPLY: The completed proposal, academic transcripts, cover letter and faculty letter of support should be forwarded to: Dr. John Jachetta, DowAgroSciences, Bid. 308: 2E/05, 9330 Zionsville Road, Indianapolis, IN 46268-1054; Phone: (317) 337-4672, Fax (317) 337-4649, Email: jjjachetta@dowagro.com. Proposals should be received no later than November 15, 1998. Funding decisions will be made by January 25, 1998 and presented at the 1999 WSSA National Meeting Awards Banquet.

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 sbraxton@aspp.org or mail to Sylvia J. Braxton, *ASPP NEWS*, 15501 Monona Drive, Rockville, MD 20855-2768 USA. **Faxed transmissions are not accepted**.

FUTURE ASPP ANNUAL MEETING SITES

1999: Baltimore, Maryland
Saturday, July 24, through
Wednesday, July 28

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

1998

AUGUST

August 16–21
Gordon Research Conference
Cellular Basis of Adaptation to Salt and Water Stress in Plants
Queen's College, Oxford, United Kingdom
Chair: Andrew Smith; vice chair: Beth Bray. For more information, visit the GRC at http://www.grc.uri.edu/ or contact J.A.C. Smith, Department of Plant Sciences, University of Oxford, South Parks Road, Oxford, OX1 3RB, UK; telephone +44-1865-275009, fax +44-1865-275074, e-mail andrew.smith@plants.ox.ac.uk.

August 17–21
Sixth International Symposium on Genetics and Molecular Biology of Plant Nutrition
Elsinore, Denmark
For information contact Arne Jensen, Plant Biology and Biogeochemistry Department, Riso, National Laboratory, PO Box 49, Building 330, DK - 4000, Roskilde, Denmark; e-mail arne.Jensen@risoe.dk, http://www.risoe.dk.

August 23–28
6th International Mycological Congress, IMC6
Jerusalem, Israel
Contact Secretariat, PO Box 50006, Tel-Aviv 61500, Israel; telephone +972-3-5140011, fax +972-3-5172265, e-mail mycol@kenes.com. See the program at http://lsb380.plbio.lsu.edu/ima/imc6prog.html.

SEPTEMBER

September 1–5
Cell Walls '98
8th International Cell Walls Meeting
John Innes Centre, Norwich, United Kingdom
Scientific organizers: Keith Roberts, Maureen McCann, and Keith Waldron. For a copy of the first circular, please contact the symposium secretary, Mrs. Gay Adams, at telephone +44-1603-452571, fax +44-1603-501771, e-mail gay.adams@bbsrc.ac.uk.

September 5–8
European Union TMR-Euroconference on Biology and Biotechnology of the Plant Hormone Ethylene II
Island of Santorini, Cyclades, Greece
Organizer and contact: Dr. Angelos K. Kanellis, National Agricultural Research Foundation, Institute of Viticulture and Vegetable Crops, PO Box 1841, GR-711 10 Heraklion, Crete, Greece; telephone/fax +30-81-245851, 245873, 242870, e-mail kanellis@nefeli.imbb.forth.gr, Web site www.imbb.forth.gr/ethylene.

September 7–19
Workshop Course on Molecular Techniques
Oregon State University, Corvallis
Contact Gail Millimaki, Molecular and Cellular Biology Program, 3021 ALS, Oregon State University, Corvallis, OR 97331; telephone 541-737-3799, e-mail mcb@bcc.orst.edu.

September 13–16
The Phytochemical Society of Europe
Biologically Active Polysaccharides

Paper deadline: May 1988. Contact Professor B. S. Paulsen, Farmasoytisk, avd c, Postboks 1068 - Blindern, 0316 Oslo, Norway; telephone 47-2285-6572, fax 47-2285-4402, e-mail b.s.paulsen@farmasi.uio.no.

OCTOBER

October 25–28
INFORMS Seattle Fall 1998
Washington State Convention & Trade Center and Sheraton Seattle Hotel & Towers
Seattle, Washington
General Co-Chairs: Marisa Altschul, Boeing, Information & Support Systems, PO Box 3707, MS 7H-73, Seattle, WA 98124; telephone 206-865-6955; and Al Maimon, Boeing Computer Services; telephone 206-237-8653.

October 28–31, 1998
14th Annual Meeting of the American Society for Gravitational and Space Biology (ASGSB)
Houston, Texas
Contact Patricia Russell, ASGSB, PO Box 12247, Rosslyn, VA 22219; fax 703-671-1706, e-mail ASGSB@usra.edu.

October 29–30
Strategic Partnerships to Successfully Commercialize Agricultural Biotech: Maximizing the Profit Potential of New Output and Input Traits
Regal Knickerbocker Hotel, Chicago, Illinois
To register or obtain more information, call Global Business Research Customer Service at 800-868-7188 or visit our Web site at http://www.global8.com/conference98/ag_cover.html.

October 31–November 2
6th International Symposium on Rice Molecular Biology
Shanghai and Hangzhou, China
Funding for travel to attend this symposium is available. Deadline for applications is July 31, 1998. Contact J. E. Leach, Department of Plant Pathology, 4024 Throckmorton Hall, Kansas State University, Manhattan, KS 66506-5502. Questions or electronic applications can be addressed to jeleach@ksu.edu. Applicants will be notified of the decision by August 13, 1998.

NOVEMBER

November 13–15
WSASPP Regional Conference on Plant Genomics

For details, check the western section Web site at http://lifesci/WSASPP/newslet98.htm#conference.

1999

JANUARY

January 21–23, 1999
20th Symposium in Plant Physiology — "Cell and Developmental Biology of Arabinogalactan-Proteins"
University of California, Riverside
Organizers: E. A. Nothnagel, A. Bacic, and A. E. Clarke. Contact Cindi McKernan, Department of Botany and Plant Sciences, University of California, Riverside, CA 92521; telephone 909-787-3423, fax 909-787-4437, e-mail bpscin@ucrac1.ucr.edu. For a more detailed listing, visit our Web site at http://cnas.ucr.edu/~bps/symposium99.htm.

January 31–February 5, 1999
Temperature Stress in Plants
Gordon Research Conference, Ventura, California
Contact Charles Guy, University of Florida, Department of Environmental Horticulture, PO Box 110670, Gainesville, FL 32611-0670; telephone 352-392-7934, fax 352-392-3870, e-mail clg@gnv.ifas.ufl.edu, Web site http://www.grc.uri.edu/programs/1999/tempstrs.htm.

MARCH

March 21–26, 1999
European Symposium on Photomorphogenesis, ESOP 99
Freie Universitaet Berlin, Germany
Organizer: Elmar Hartmann. Contact Hans-Peter Haschke, Freie Universitaet Berlin, Institute of Plant Physiology and Microbiology, Koenigin-Luise-Strasse 12-16, D-14195 Berlin, Germany; telephone +49-30-838-31-28, fax +49-30-838-43-57, e-mail haschke@zedat.fu-berlin.de. Web site http://www.biologie.fu-berlin.de/esop99.

MAY

May 2–5, 1999
INFORMS Cincinnati Spring 1999
Omni Netherland Plaza
Cincinnati, Ohio
General Chair: David F. Rogers, University of Cincinnati, Cincinnati, OH 45221-0130; telephone 513-556-7143.

May 16–20, 1999
6th Symposium on Stand Establishment and the Seed Working Group of the International Society for Horticultural Science
Roanoke, Virginia
Contact Greg Welbaum, Department of Horticulture, Virginia Tech, Blacksburg, VA 24061-0327; telephone 540-231-5801, fax 540-231-3083, e-mail welbaum@vt.edu; visit our symposium Web site at http://www.conted.vt.edu/stand/establishment.htm.

JULY

July 11–16, 1999
Forest Biotechnology '99
A joint meeting incorporating the 3rd International Wood Biotechnology Symposium and the IUFRO Working Party for the Molecular Genetics of Trees (S.04-06)

Contact Malcolm M. Campbell, Department of Plant Sciences, University of Oxford, South Parks Rd., Oxford OX1 3RB, UK; telephone +44-1865-275135, fax +44-1865-275074, e-mail forest.biotech99@plants.ox.ac.uk, Web site http://www.plants.ox.ac.uk/top.htm.

July 17–21, 1999
International Symposium on Plant Peroxidases
Columbus, Ohio
For more information please contact Dr. L. Mark Lagrimini, Department of Horticulture and Crop Science, The Ohio State University, 2001 Fyffe Ct., Columbus, OH 43210-1096; e-mail lagrimini.1@osu.edu, Web site http://www.hcs.ohio-state.edu/pod/pod.htm.

July 19–23, 1999
2nd International Symposium on Plant Dormancy
Angers, France
For information and registration forms contact Dr. J. D. Viemont, Université d'Angers, Faculté des Sciences, 2 Boulevard Lavoisier, F-49045 Angers, Cedex, France; fax +33-241-73-53-52, e-mail jean-daniel.viemont@univ.angers.fr.

ASPP Placement Service

This form may be used only by members of the American Society of Plant Physiologists.
Please print or type your placement information on this form (curriculum vitae will not be accepted) and send it to
Estella Coley, ASPP Headquarters, 15501 Monona Drive, Rockville, MD 20855-2768

LAST NAME _____ TITLE _____ FIRST NAME _____ INITIAL _____

STREET ADDRESS _____

CITY _____ STATE _____ ZIP _____ COUNTRY _____

TELEPHONE _____ FAX _____ E-MAIL _____

I am seeking the following position (check all that apply):

[ ] Permanent [ ] Temporary [ ] Postdoctoral [ ] Industrial
[ ] Academic [ ] Government [ ] USA only [ ] Outside USA

US citizen? [ ] Yes [ ] No **Date available:** _____

Fields of interest, specialties, and publications titles: _____

Thesis, dissertation topics, professor: _____

Professional societies and honors: _____

Degree/year	Major	Minor	College/university and its location

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

Employer and location	From	To	Position, Title, Duties

References (names, addresses, telephone numbers):

ASPP Job Placement Service

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 Estella Coley, ASPP Placement Service, 15501 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 J. Braxton at sbraxton@aspp.org (or by mail to Sylvia J. Braxton, 15501 Monona Drive, Rockville, MD 20855-2768; **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.

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

Faculty Position
Tel Aviv University, Tel Aviv, Israel
(Received 05/18)

Applications are invited for a tenure-track faculty position starting in 1999. The successful candidate is expected to develop independent research focusing on organismic botany, plant ecology, plant cell biology, and/or plant physiology using modern tools. The qualified individual is expected to participate in teaching of either Introductory Botany, Introductory Ecology, Introductory Plant Cell Biology, or Introductory Plant Physiology. Please direct inquiries, as well as a curriculum vitae, bibliography, names of three references, and a statement of future research plans to Professor Adina Breiman, Chair of the Department of Plant Sciences, Tel Aviv University, Tel Aviv 69978, Israel.

Assistant Cooperative Extension Vegetable Specialist
University of California, Davis
(Received 05/21)

An 11-month, career-track extension position is available. This academic position has 100% Cooperative Extension responsibilities, which include research, outreach, and education. The appointee will be located at the UC/USDA Research Center in Salinas and will be an integral part of the University of California, Davis, Department of Vegetable Crops. Research and education emphasis will be on economically and environmentally sound soil, nutrient, water, and crop management practices for cool-season vegetable crops in the Central Coast region of California. Appointee will provide statewide extension leadership, interact with numerous clientele groups, and provide farm adviser training and advising. Appointee will have the opportunity to participate in departmental teaching and in directing undergraduate and graduate research. Requirements include a Ph.D. in horticulture, agronomy, soil science, plant nutrition, water science, plant physiology, botany, or closely related discipline; demonstrated ability to conduct independent research in irrigated agricultural systems; understanding of extension methodologies; excellent written and oral communication skills; and a record of scholarly and academic achievement. Experience with the commercial vegetable industry is highly desirable. Send curriculum vitae; statement of extension and research interests; documentation of extension, research, and teaching experience; official transcripts (if within five years of graduation); and names and addresses of at least three professional references by September 1, 1998, to Dr. Timothy Hartz, Search Committee Chair, Department of Vegetable Crops, University of California, Davis, CA 95616-8746; telephone 530-752-1738, fax 530-752-9659, e-mail hartz@vegmail.ucdavis.edu. For additional information, see the complete position description on the Web site at http://veghome.ucdavis.edu/positions/CESpecialist.html. The University of California is an affirmative action/equal opportunity employer.

Electron Microscopy Specialist
New Mexico State University, Las Cruces
(Received 05/21)

The Electron Microscopy Laboratory at New Mexico State University has an open position for an electron microscopy specialist. The laboratory is a multiuser facility that provides TEM, SEM, and light microscopy services for the university research community and a few external organizations. Qualifications: M.S. degree minimum, Ph.D. desirable, with at least three years of electron microscopy experience. The preferred candidate will be skilled in transmission electron microscopy and immunohistochemical techniques as applied to the study of plant and animal (nervous system, cell culture) cells. Knowledge of fluorescence microscopy, SEM, digital image analysis, and the use of networks in computing are assets. The applicant should be experienced at teaching microscopy fundamentals and in managing a multiuser teaching and research laboratory. The ability to work well with research faculty, other EML staff, and students is essential. Duties: Operation and routine maintenance of microscopes and associated equipment, sample preparation, coordination of projects, billing, course instruction, supervision of student research projects, some educational outreach activities, technical support for EML components

MAXIMIZE YOUR JOB PROSPECTS!
Check ASPP's World Wide Web site (http://aspp.org/JOBS/) every Friday for new job listings.
Jobs with early application deadlines are listed on the Web site, but might not appear in *ASPP NEWS*.

of sponsored grants, training of laboratory users. Salary: $33,544–$40,500 DOE plus 26% fringe benefits. Review of applications will begin June 19 and continue until the position is filled. Applications should include a resume, a letter of interest, and three letters of reference to Dr. Reed Dasenbrock, Associate Dean/Director, Arts and Sciences Research Center, New Mexico State University, MSC RC, Box 30001, Las Cruces, NM 88003; e-mail rdasenbr@nmsu.edu. For more information about the NMSU EML, access http://www.nmsu.edu/Research/artsci/public_html/eml/index.html#staff.

Lecturer (Assistant Professor)
University of Wales, Bangor, United Kingdom
(Received 05/27)
The School of Biological Sciences invites applications for the post of lecturer (tenure-track assistant professor) in plant molecular biology. The successful applicant will be expected to develop their own externally funded research program and to contribute to undergraduate and postgraduate teaching. The position is designed to further strengthen an active plant science research group within the School, which also includes an active microbial molecular group (also currently recruiting). Research records and plans will be the primary criteria used in assessing applicants. The range of interests within the school will allow for consideration of a range of specific areas of research. Salary will be commensurate with experience on the lecturer scale A/B 16,045–27,985 pounds sterling. Application forms and further particulars are available by contacting Personnel Services, University of Wales Bangor, Gwynedd, LL57 2DG, Wales, UK; telephone +44-1248-382310, e-mail pos020@bangor.ac.uk. Informal inquiries can be made by contacting Dr. M. A. Lock, Head of School; telephone +44-1248-382310 or e-mail m.a.lock@bangor.ac.uk. Our Web site is http://oracle.bangor.ac.uk/sbs/. The closing date for applications is July 24. The University of Wales Bangor is committed to equal opportunities.

Visiting Assistant Professor
Chatham College, Pittsburgh, Pennsylvania
(Received 05/27)
Chatham College is seeking qualified applicants for an assistant professor in biology. The successful applicant will be able to teach cell and molecular biology and courses in the area of plant sciences. Additional expertise in the areas of horticulture and/or histotechniques would be welcome. This is a one-year appointment with the possibility of renewal or reappointment in a tenure-track capacity. Qualifications: earned doctorate, teaching experience at the college level, ability to direct senior research projects in the listed areas, and an interest in academic advising. Founded in 1869, Chatham College is a private, non-sectarian institution offering baccalaureate degrees only to women. Master's degrees are offered to women and men. The College, a pioneer in curricular progress, is dedicated to enabling its graduates to make an impact on the world around them. Students and staff have easy access to Pittsburgh's dynamic cultural and entertainment opportunities and can share in educational and social offerings of nine other area colleges and universities. Please send curriculum vitae, summary of qualifications, and the names of three references to Chatham College, Human Resources Department, Job #263, Woodland Road, Pittsburgh PA 15232. Chatham College is an equal opportunity employer.

Head, Department of Horticulture & Landscape Architecture
Purdue University, West Lafayette, Indiana
(Received 06/08)
Applications are invited for Head of Horticulture and Landscape Architecture. Duties include administering teaching, research, and extension programs and budgetary and personnel management related to the faculty, staff, and students. Candidates must have a Ph.D. and be eligible for tenure at the rank of full professor. The department consists of 26 faculty positions and 18 professional staff. The undergraduate program includes 125 students in horticulture and 145 students in landscape architecture. Both M.S. and Ph.D. graduate degree programs are offered. The department houses three interdisciplinary centers. The department recently moved into new plant growth facilities. Applicants should submit letter of application, statement of administrative philosophy, and curriculum vitae including names, addresses, and telephone numbers of five references. Review of applicants will begin on September 22, 1998. Address applications to Dr. Michael Hasegawa, Co-Chair, Horticulture Department Head Search Committee, 1140 Agricultural Administration Building, Purdue University, West Lafayette, IN 47907-1140; telephone 765-494-1315, fax 765-494-0391. Purdue University is an affirmative action/equal opportunity employer; women and minorities are encouraged to apply.

Plant Biologist and Plant Developmental Biologist
University of Delaware, Newark
(Received 06/09)
Two faculty positions are available at the University of Delaware. The first is for a plant biologist with interests in plant biochemical genetics, multigenic traits, metabolic engineering, or secondary metabolism relevant to plant resistance to insects. The second is for a plant developmental biologist. The individuals will have the opportunity to interface with a world-class effort in plant genomics at DuPont. Qualifications: Ph.D. in plant biology with postdoctoral experience. Rank and Salary: Assistant professor; nine-month appointment; tenure-track position, salary commensurate with training and experience. The university provides an excellent, comprehensive benefits package. Appointments will be in the Center for Agricultural Biotechnology and Department of Plant and Soil Sciences of the College of Agricultural and Natural Resources. The Plant and Soil Sciences Web site is http://bluehen.ags.udel.edu/homepage/plsc/plschome.html. Send a letter of application, curriculum vitae, the names of three scientists willing to write informative letters of recommendation, and a description of current and future research interests to Dr. Bertrand Lemieux, Search Committee Chair, Department of Plant and Soil Sciences, University of Delaware, Newark, DE 19717-1303. The closing date is September 30, 1998, or until a suitable candidate is identified. The University of Delaware is an equal opportunity employer and encourages applications from minority group members and women.

Assistant Professor
University of Minnesota, St. Paul
(Received 06/19)
Applications are invited for a 12-month, tenure-track assistant professor position in Floriculture Breeding and Genetics. Research is on the genetic improvement of floricultural crops of potential importance in Minnesota. Research areas could include development of new crop species, novel uses or forms of traditional crops, or genetic improvement of species to improve sustainability of production systems such as resistance to biotic or abiotic stresses. Teaching in floriculture and related areas and advising of undergraduate and graduate students. Minima: Ph.D. or equivalent in plant breeding, horticulture, or related discipline with demonstrated expertise in plant genetics by date of appointment; effective oral and written communication skills. Desired: Graduate level course work in floriculture, plant breeding, genetics, and molecular biology; experience in greenhouse production systems; effectiveness in teaching. Applicants must send curriculum vitae, graduate transcripts, detailed statement of teaching and research interests, and three letters of references to Chair, Floriculture Genetics Search Committee, Department of Horticultural Science, University of Minnesota, 305 Alderman Hall, St. Paul, MN 55108. Review of applications will begin October 10, 1998, and will continue until position is filled. The University of Minnesota is an equal opportunity educator and employer.

Head
Montana State University, Bozeman
(Received 06/29)
The Plant Sciences Department seeks a dynamic individual to lead a strongly interactive faculty (26 tenure track and 10 research). Annual expenditures of $5 million support strong research, teaching, and extension programs in plant pathology, plant biology, plant genetics, crop science, and horticulture; B.S., M.S., and Ph.D. programs with 140 undergraduate and 30 graduate students; state-of-the-art laboratory and plant-growth facilities with a new Ag Biosciences facility. Requires a doctorate in a plant science discipline and academic qualifications for appointment as associate or full professor. Must request complete application materials from Sarah Briggs, Plant Sciences Department, 513 Leon Johnson Hall, Bozeman, MT 59717-3140; telephone 406-994-4833, fax 409-994-1848, e-mail ZPL7001@montana.edu. Screening begins October 5, 1998. ADA/EO/AA/Veterans Preference.

Bailey Chair in Environmental Horticulture
University of Minnesota, St. Paul
(Received 07/06)
Applications and nominations are invited for the Gordon and Margaret Bailey Endowed Chair in Environmental Horticulture, a 12-month appointment beginning July 1, 1999, or as soon thereafter as possible, to be filled at the level of associate or full professor with tenure. The chair holder will direct a research program in environmental horticulture, addressing research goals such as woody plant and tree fruit production, culture, breeding, and over-wintering of woody plants. The Bailey Professor will be active in graduate education and will teach at least one course at the undergraduate level. The applicant will engage in outreach activities to expand and strengthen interaction with the nursery industry. Applications from outstanding mid-career scientists are especially encouraged. To apply, submit a curriculum vitae, including a full list of publications; names and addresses of four references; and a brief statement of teaching, research, and public-service interests pertinent to the Bailey Chair to John Carter, Chairman, Bailey Professorship Search Committee, Department of Horticultural Science, 305 Alderman Hall, University of Minnesota, St. Paul, MN 55108. Nominations should be directed to the same address. Review of applications will begin December 31, 1998, and continue until the position is filled. The University of Minnesota is an equal opportunity educator and employer.

Science Writer/Editor
THE PLANT CELL, American Society of Plant Physiologists
Rockville, Maryland
(Received 07/06)
The American Society of Plant Physiologists has an immediate opening for news and reviews editor of its journal THE PLANT CELL. Individual bears full responsibility for content and editing of front section, including writing articles and selecting and editing articles written by others; handles all aspects of the publication of review articles; coordinates editing and production of special review issues; attends scientific meetings and has frequent contact with plant cellular, molecular, and developmental biologists. Qualifications: demonstrated excellent writing skills, including ability to synthesize complex scientific concepts and explain them in a clear, intelligible fashion; minimum of a master's degree in genetics or biology, with Ph.D. highly desirable; ability to communicate effectively and tactfully with authors; ability to gain rapid understanding of unfamiliar research areas and to recognize what topics in current plant biological research merit commentary. Salary commensurate with experience; excellent benefits. Send cover letter, resume, salary history, and writing samples to Job Search, American Society of Plant Physiologists, 15501 Monona Drive, Rockville, MD 20855-2768. Please do not call. Equal opportunity employer.

Assistant Professor
West Virginia University, Morgantown
(Received 07/13)
A nine-month tenure-track position is available in the floriculture and nursery crops department. Responsibilities include teaching greenhouse and nursery management and developing extramurally funded research program applicable to West Virginia. Working as a team member in research and teaching is essential. The development of relationships with West Virginia's floriculture nursery industry is expected. Duties also include advising undergraduate students and supervising work of M.S. and Ph.D. students. Interested individuals should submit a cover letter of accomplishments, one-page statement of goals within the context of position, complete resume, transcripts, names and addresses of three professional references, and any supporting material to Dr. Barton Baker, Division of Plant and Soil Sciences, West Virginia University, College of Agriculture, Forestry, and Consumer Sciences, PO Box 6108, Morgantown, WV 26506-6108. Applications received by September 15, 1998, will be given highest priority. Applications accepted until position filled. Position is available January 1, 1999. Women and members of minority groups encouraged to apply. AA/EEO employer.

Molecular Biologist
CSIRO Forestry and Forest Products
Canberra, Australia
(Received 07/17)
Forestry and Forest Products is extending its commitment to molecular research relating to the basis of wood and pulp quality in forest tree species. We are seeking to appoint a molecular biologist to work in this area. It is proposed the initial focus will be on genes involved in cellulose biosynthesis in eucalypt species. As the successful candidate, you will lead this area of research and also be expected to take a key role in the existing molecular genetics team working on molecular breeding of forest tree crops. The person we are seeking must have a Ph.D. in molecular biology or equivalent together with extensive expertise in a wide range of molecular techniques. Demonstrated research experience in gene isolation and characterization plus the ability to take a lead role in developing molecular projects in a collaborative team environment is essential. Candidate will need to have excellent communication skills and an outstanding publication record. This appointment will be for a period of five years. Salary $51K–$69K + superannuation. Further information may be obtained by contacting Dr. Gavin Moran at +61-2-6281-8208, fax +61-2-6281-8233, e-mail gavin.moran@ffp.csiro.au. Please contact Ms. Kerry Doutch at +61-2-6281-8352 or e-mail kerry.doutch@ffp.csiro.au for a copy of the duty statement and selection criteria. The closing date is August 7, 1998.

Assistant, Associate or Full Scientist
Samuel Roberts Noble Foundation
Ardmore, Oklahoma
(Received 07/20)
The Plant Biology Division at The Samuel Roberts Noble Foundation has an opening for a principal investigator (at assistant, associate, or full scientist level) to initiate a new program in functional genomics in the model legume *Medicago truncatula*. We are looking for candidates with experience in molecular genetics-and/or genomics-based approaches to fundamental problems in plant biology. Particular consideration will be given to candidates with backgrounds in plant–microbe interactions, root biology, natural product biosynthesis, or stress biology. The successful candidate will be expected to develop an internationally recognized program focusing on the application of genomic approaches for assessment of gene function. Excellent opportunities exist for collaboration with existing groups in the Plant Biology Division that are currently working on alfalfa or *M. truncatula*, and with the foundation's new forage biotechnology group. The division provides state-of-the-art facilities and support services for molecular plant research. Initially, full funding will be available to fill four postdoctoral and/or technical positions for the new group. In addition, as part of this new genomics program, we intend to make future hirings in the areas of bioinformatics and high throughput metabolite analysis. The Plant Biology Division is housed in new, excellently equipped facilities on the foundation's campus at Ardmore, Oklahoma. It is expected that the successful candidate will eventually occupy half of a new 7,000 sq. ft. laboratory addition. Competitive salary commensurate with experience, benefits, and relocation expenses are provided. Applicants should send a full curriculum vitae, covering letter, and names of at least three referees to Jane Nance, Human Resources Assistant, The Samuel Roberts Noble foundation, PO Box 2180, Ardmore, OK 73402. For further information on the Noble Foundation, please visit our Web site at http://www.noble.org, or contact the division director, Dr. Richard A. Dixon, at 580-223-5810. The Noble Foundation is an equal opportunity employer.

Assistant/Associate Professor
Oklahoma State University, Stillwater
(Received 07/20)
The Department of Plant and Soil Sciences is seeking to fill a full-time (approximately 90% research and 10% teaching) tenure-track position to develop a plant genomics program to aid in the development of improved wheat cultivars. Targeted traits may include value-added grain quality, disease and insect resistance, pharmaceutical–nutritive value of forage, and abiotic stress tolerance. Research into fundamental areas of genome organization, gene isolation, or development of improved selection tools is encouraged. Effective interaction with members of the Wheat Improvement Team (see http://clay.agr.okstate.edu/wheat/wit.html) will be essential. Minimum qualifications include a Ph.D. in plant genetics or a closely related area. Postdoctoral experience or prior experience at an assistant professor level is desirable. In addition, successful entry at the associate professor rank requires evidence of externally funded research, noteworthy publications, and an ability to conduct collaborative research. Send a letter of interest, curriculum vitae, and official transcripts and arrange for three letters of reference to be

sent directly to Dr. Robert L. Westerman, Oklahoma State University, Department of Plant and Soil Sciences, Stillwater, OK 74078-6028; telephone 405-744-6425, fax 405-744-8687, e-mail rlw@agr.okstate.edu. OSU is an AA/EO employer committed to multicultural diversity.

POSTDOCTORAL POSITIONS

Postdoctoral Position
INRA/CNRS, Montpellier, France
(Received 04/30)
A two-year postdoctoral position is available starting October 1998 as part of an EU program on nitrogen signaling in plants. The successful candidate will join a group working on nitrogen transporters in roots and regulation of nitrogen uptake. The position involves identifying compounds that repress expression of nitrate transporters in Arabidopsis and characterizing transgenic plants and mutants. Experience in plant molecular biology is required. Acquaintance with plant physiology/biochemistry is desirable. Please send statement of interest, curriculum vitae, and three references to Dr. Bruno Touraine, Biochimie et Physiologie Moleculaire des Plantes, ENSA-M/INRA/CNRS-URA2133, 34060 Montpellier Cedex 1, France; telephone +33-499612604, fax +33-467525737, e-mail touraine@ensam.inra.fr.

Postdoctoral Position
Oklahoma State University, Stillwater
(Received 05/04)
A postdoctoral position is available immediately to study basic protein structure–function relationships of a membrane-bound metallo-protein complex. The work combines state-of-the-art molecular genetic, biochemical, and biophysical approaches to clarify the process of photoactivation, the light-dependent assembly of the catalytic tetramer of manganese atoms that forms the core of the H_2O-oxidation complex. Strong background in protein biochemistry and molecular biology required. Interested applicants should send curriculum vitae, cover letter, and three letters of reference to Robert L. Burnap, Microbiology & Molecular Genetics, Life Sciences East, Oklahoma State University, Stillwater, OK 74078; e-mail burnap@biochem.okstate.edu, Web site http://www.cas.okstate.edu/micro/faculty/BURNAP/index.html. Equal opportunity employer/AA.

Research Associate
University of Arizona, Tucson
(Received 05/04)
Two postdoctoral research positions are available to study molecular genetic and cell biological aspects of maize endosperm development. The research will focus on the regulation of DNA endoreduplication and the role of the cytoskeleton in mRNA trafficking. Candidates must have a Ph.D. with appropriate experience in genetics, protein biochemistry, and ultrastructural analyses. Send letter of application, resume, and three letters of reference to Dr. Brian A. Larkins, Department of Plant Sciences, University of Arizona, Tucson, AZ 85721; telephone 520-621-9958, fax 520-621-3697, e-mail larkins@ag.arizona.edu. The opening date for the position is September 1, 1998. The starting salary is $25,000 (range based on experience). The University of Arizona is an EEO/AA/ADA employer. Women and minorities are encouraged to apply.

Postdoctoral Position
University of California, Riverside
(Received 05/05)
Two postdoctoral positions will be available August 1, 1998, to investigate (1) how a novel RNA-binding protein regulates translation in yeast and plants and (2) how programmed cell death (PCD) is initiated during plant development. For the first position, studies will include protein–protein and protein–RNA analysis between the novel protein and the translational machinery as well as the genetic analysis of the signal transduction pathway through which the protein is regulated. The second position will focus on the hormonal control of PCD and the role of nucleases and proteases in the PCD program. Candidates must have a strong background in molecular biology and/or biochemistry in yeast or plants. Send curriculum vitae and application (by e-mail) and three letters of recommendation to Dr. Daniel R. Gallie, Department of Biochemistry, University of California, Riverside, CA 92521; fax 909-787-3590, e-mail drgallie@citrus.ucr.edu.

Postdoctoral Position
Texas A&M University, College Station
(Received 05/08)
A postdoctoral position is available to genetically engineer soybean and another suitable crop to produce antibodies for immunotherapy. The research is a collaborative project with the Department of Veterinary Pathobiology to utilize a novel approach to prevent neonatal colibacillosis in bovine calves by delivering antibodies produced in developing seeds. A strong background in tissue culture/transformation of recalcitrant species is required. Experience in soybean tissue culture/transformation would be advantageous. Send curriculum vitae detailing experience, a statement of research interests and career goals, and names and phone numbers of three references to Dr. Keerti S. Rathore, Crop Biotechnology Center, Texas A&M University, College Station, TX 77843-2123; e-mail rathore@tamu.edu.

Postdoctoral Position
Miami University, Oxford, Ohio
(Received 05/18)
A postdoctoral research position is available immediately to carry out a biochemical and molecular–genetic analysis of genes coding for fatty acid elongase condensing enzymes. We have cloned several unique fatty acid elongase genes, and we are interested in using them to modify the composition of oil seeds and alter surface wax composition. Applicants should have a strong background in molecular biology and plant biochemistry. The position is for two or three years. Please send curriculum vitae, including research interests, and three letters of reference to Dr. Jan Jaworski, Chemistry and Biochemistry, Miami University, Oxford, OH 45056; fax 513-529-5715, e-mail jaworsjg@muohio.edu.

Postdoctoral Position
University of Kentucky, Lexington
(Received 05/20)
A postdoctoral scholar is sought for a project involving the isolation and characterization of plant tissue-specific promoters and genes and the use of these promoters and genes to manipulate secondary metabolism. Experience in plant gene isolation and vector construction, as well as plant transformation, is required. Please send your application and resume to Dr. G. Wagner at gwagner@ca.uky.edu.

Postdoctoral Position
University of Nebraska, Lincoln
(Received 05/20)
We are seeking a highly motivated molecular biologist to participate in an NSF-funded project to elucidate mechanisms involved in the carbon concentrating mechanism (CCM) of photosynthesis in the model plant cell system *Chlamydomonas reinhardtii* (e.g., *Plant Physiol. 114*:237–244). The individual selected will have the opportunity to utilize newly developed methods for facile gene isolation and analysis and to engage in development of new approaches in genomics research. To apply, send your curriculum vitae and the names and addresses of three references to Dr. Don Weeks, Room N156, Beadle Center, University of Nebraska, Lincoln, NE 68588-0664; fax 402-472-7842, email btec001@unlvm.unl.edu.

Postdoctoral Position
Connecticut Agricultural Experiment Station
New Haven
(Received 05/20)
A postdoctoral position is available for two years to study the transport of nucleobase compounds in plants. Mutational analysis and membrane localization studies for select plant nucleobase transporters will be performed in Arabidopsis. Structure/function experiments on plant nucleobase transporters will be performed in microbial systems. Applicants must have a Ph.D. in biological sciences, with experience in plant molecular biology or yeast and Aspergillus manipulation highly preferred. Send a curriculum vitae and the names of three references (including e-mail address and telephone number) to Dr. Neil Schultes, Department of Biochemistry & Genetics, The Connecticut Agricultural Experiment Station, 123 Huntington St., New Haven, CT 06511 USA; fax 203-974-8502, e-mail nschult@caes.state.ct.us. The Connecticut Agricultural Experiment Station is an affirmative action/equal opportunity employer.

Postdoctoral Fellow
University of California, Berkeley
(Received 05/25)
A postdoctoral position is available to study signal transduction via protein tyrosine phosphorylation and dephosphorylation in Arabidopsis. The research project is focused on the function of

protein tyrosine phosphatases (see *Plant Cell, 10:*849–858). Applicants must have a strong background in molecular biology, and protein biochemistry skill is a plus. Please send curriculum vitae to Dr. Sheng Luan, Department of Plant and Miocrobial Biology, 451 Koshland Hall, University of California, Berkeley, CA 94720; e-mail sluan@nature.berkeley.edu.

Postdoctoral Position
Bioprocessing Group, Richland, Washington
(Received 05/28)
Several plant molecular biology postdoctoral research positions are available after October 1, 1998. Specific research areas will include development of transgenic plant strains for foreign protein production as well as isolation and characterization of novel plant genetic regulatory elements. On the basis of individual performance, these positions may become full staff positions. Applicants should have documented skills in plant physiology, plant molecular biology, and biochemical techniques. Please send a curriculum vitae, brief statement of research experience, and the names of at least three references to Dr. Brian S. Hooker, Bioprocessing Group, Environmental Technology Division, Pacific Northwest National Laboratory, Richland, WA 99352; telephone 509-375-4420, fax 509-372-4660, e-mail brian.hooker@pnl.

Postdoctoral Positions
University of Florida, Lake Alfred
(Received 06/01)
Several postdoctoral positions are available as part of a comprehensive program on citrus abscission beginning September 1, 1998. The first position will examine seasonal hormonal fluxes in relation to abscission. Candidates should have a solid foundation in plant hormone analysis, especially auxin and ethylene. The second position will involve identification of unique abscission-related proteins and genes. Candidates should have a strong background in molecular biology. Experience with differential display and/or library construction is desirable. The third position will focus on mode of action of abscission materials unique to this program. Candidates must have a strong background in plant physiology/biochemistry. Salary is $32,000/yr. Send a curriculum vitae and names of three references to Dr. Jackie Burns, Citrus Research and Education Center, University of Florida, 700 Experiment Station Road, Lake Alfred, FL 33850; telephone 941-956-1151, e-mail jkbu@tangelo.lal.ufl.edu.

Postdoctoral Position
Iowa State University, Ames
(Received 06/01)
A postdoctoral position is available beginning August 15, 1998, to study signal transduction in plant development. CR4 is a receptor kinase critical for the differentiation of maize leaf epidermis (Becraft et al. [1996], *Science, 273:*1406) and a presumed cognate has recently been isolated from Arabidopsis. Current objectives are to identify additional components of the CR4 signal transduction pathway. Applicants must have a strong background in molecular biology. Send letter, curriculum vitae, and contact information for three references to Philip Becraft, Zoology and Genetics Department, 2116 Molecular Biology Building, Iowa State University, Ames, IA 50011; telephone 515-294-2903, e-mail becraft@iastate.edu.

Postdoctoral Position
USDA-ARS, Beltsville, Maryland
(Received 06/02)
A postdoctoral research position is available to study pectolytic enzymes produced by postharvest fungal pathogens. Laboratory currently investigates natural internal mechanisms of resistance to cell wall–degrading enzymes to maintain the quality of stored fruit (mainly apples). A plant pathologist with a strong background in biochemistry is needed to purify and characterize enzymes produced by fungi that degrade apple cell walls resulting in decay. The incumbent will study the isozymes of the important enzymes and determine the sequence of their production. The ultimate goal of this research is to determine the actual role of these enzymes in fruit decay and to determine the presence in fruit of enzyme inhibitors. A recent degree in plant pathology/biochemistry is required, as is knowledge of protein isolation and characterization techniques and experience in enzymology. Knowledge of molecular biology techniques is desirable. Starting salary is $39,270 per annum, plus benefits, for a two-year assignment. Applicants should submit a resume and names of three references to Dr. William S. Conway, USDA-ARS, Horticultural Crops Quality Laboratory, Building 002, Room 117, BARC-West, 10300 Baltimore Ave., Beltsville, MD 20705; telephone 301-504-6128, fax 301-504-@5107, e-mail wconway@asrr.arsusda.gov. USDA-ARS is an equal opportunity employer.

Postdoctoral Position
Texas A&M University Research Center, El Paso
(Received 06/08)
A postdoctoral position will be available (fall of 1998) to further our understanding of the role of the V-ATPase, and specifically 2 isoforms of the A subunit, in the response of plants to salinity. Applicants should have a strong background in molecular biology; experience with in situ hybridization and immunolocalization is desirable. Send a curriculum vitae, statement outlining research experience and interests, and three letters of reference to Dr. Marla Binzel, Texas A&M Research Center, 1380 A&M Circle, El Paso, TX 79927; fax 915/859-1078, e-mail mbinzel@tamu.edu. Texas A&M is an equal opportunity employer.

Postdoctoral Position
Washington State University, Pullman
(Received 06/08)
A postdoctoral position is available beginning September 1998. Research is on how the mechanism of photosynthesis in C_4 plants responds to changes in CO_2 and temperature. A Ph.D. in plant physiology or related discipline is required, as well as experience with gas exchange techniques, chlorophyll fluorescence analysis, gene expression, and protein-enzyme analysis. Applicants should send via hard copy a curriculum vitae, a brief statement of research background, and the names, addresses, telephone numbers, and e-mail addresses of three references to Dr. Gerald Edwards, Botany Department, Washington State University, Pullman WA 99164-4238; fax 509 335-3517, e-mail edwardsg@wsu.edu.

Postdoctoral Research Associate
University of Illinois, Urbana
(Received 06/12)
A postdoctoral research associate position is available to carry out research in the area of promoter, transient, and stable expression and selectable marker optimization using several different plant species systems. Candidate should have a Ph.D. and experience in promoter design and construction, cell expression assays, plant transformation, and general molecular biology and biochemistry. Applicant should be able to communicate and interact well with others in a collaborative group. Send application letter, resume, and list of three references to Jack Widholm, University of Illinois, Department of Crop Sciences, ERML, 1201 W. Gregory Drive, Urbana, IL 61801; telephone 217-333-9462, fax 217-333-4777, e-mail widholm@uiuc.edu. Evaluation of applications will begin on July 15, 1998, and continue until the position is filled. The University of Illinois is an affirmative action/equal opportunity employer.

Postdoctoral Position
University of Illinois, Urbana
(Received 06/12)
A postdoctoral position is available to participate in construction of cDNA libraries for a multi-university EST sequencing project and in their analysis by global gene expression methods including high-density expression arrays and development of microarray technology for use in soybean. Experience in molecular biology required, preferably including cloning and mRNA analysis. Excellent facilities, equipment, and space are available for research. Review of applications will begin July 1, 1998, and continue until a suitable candidate is identified. Send curriculum vitae including research background and interests, transcripts or summary of graduate coursework, and three letters of reference to Dr. Lila Vodkin, 384 Madigan Biotechnology Laboratory, Department of Crop Sciences, 1201 W. Gregory Drive, University of Illinois, Urbana, IL 61801; e-mail l-vodkin@uiuc.edu.

Postdoctoral Position
University of Illinois, Urbana
(Received 06/12)
A postdoctoral position is available involving the transformation of soybean via somatic embryogenesis and/or *Agrobacterium tumefaciens* using constructs for modulation of expression of proteins and pathways in developing seeds and plants. Projects also include transformation of Arabidopsis as a test system. Experience with tissue culture required and molecular biology experience preferred. Excellent facilities,

equipment, and space are available for research. Salary commensurate with experience. Review of applications will begin July 1, 1998, and continue until a suitable candidate is identified. Send curriculum vitae including research background and interests, transcripts or summary of graduate coursework, and three letters of reference to Dr. Lila Vodkin, 384 Madigan Biotechnology Laboratory, Department of Crop Sciences, 1201 W. Gregory Drive, University of Illinois, Urbana, IL 61801; e-mail l-vodkin@uiuc.edu.

Postdoctoral Position
Texas A&M University, College Station
(Received 06/15)
A postdoctoral position is available to genetically engineer cotton to reduce substantially or eliminate completely gossypol from cottonseed. The approach involves utilizing tissue-specific promoters and antisense technology to selectively knock out the expression of a gene that encodes for delta-cadinene synthase, a key enzyme involved in the biosynthesis of gossypol. The incumbent will join an ongoing project involving gossypol reduction and will also have opportunities to participate in other research projects on genetic engineering of soybean and cereals. A strong background in tissue culture/transformation is desired. Experience in molecular biology is an advantage. Send curriculum vitae detailing experience, a statement of research interests and career goals, and names and phone numbers of three references to Dr. Keerti S. Rathore, Crop Biotechnology Center, Texas A&M University, College Station, TX 77843-2123; e-mail rathore@tamu.edu.

Postdoctoral Fellow
University of Guelph, Ontario, Canada
(Received 06/16)
A postdoctoral position is available to improve greenhouse crops when grown under light-limiting conditions. The successful candidate will be responsible for transformation and genetic and physiological analyses of transformants. Experience in transformation and molecular techniques is essential. A strong background in plant physiology, especially for photosynthesis and photomorphogenesis, is also important. Please send curriculum vitae and e-mail addresses of three references to Dr. David Wolyn, Department of Plant Agriculture, Bovey Building, University of Guelph, Guelph, Ontario, Canada, N1G 2W1; fax 519-767-0755, e-mail dwolyn@evbhort.uoguelph.ca.

Postdoctoral Positions
University of California, Riverside
(Received 06/16)
The candidates will study the cell, molecular, and developmental biology of the lipids and their associated proteins in organelles in flowers and seeds. (See *Plant J. 11*:475, 1997; *J. Biol. Chem. 272*:3699, 1997; *PNAS 4*:12711, 1997.) Candidates should have a strong background in cell/molecular/developmental biology and biochemistry. Send resume and names of referees to Dr. Anthony Huang, Department of Botany and Plant Sciences, University of California, Riverside, CA 92521; telephone 909-787-4783, fax 909-787-4437, e-mail ahuang@ucrac1.ucr.edu.

Postdoctoral Position
Waksman Institute, Rutgers University
Piscataway, New Jersey
(Received 06/16)
A postdoctoral position is available to study genomic organization in maize. The specific objective of the project is to elucidate features of the meiotic recombination process in and around the bronze locus, an unusually recombinogenic and gene-rich region of the genome, using the transposon *Ac* as a genetic and molecular marker (see *Plant Cell 9*:1633, 1997, and *Genetics 147*:1923, 1997). Experience in molecular biology essential; prior experience with handling, cloning, and analysis of large DNA highly desirable. Send curriculum vitae and the names and addresses of three references to Dr. Hugo K. Dooner, Waksman Institute, Rutgers University, Piscataway, NJ 08855; e-mail dooner@mbcl.rutgers.edu.

Postdoctoral Position
University of Southwestern Louisiana
Lafayette, Louisiana
(Received 06/18)
A recently funded DOE grant includes a postdoctoral position to study the elastomechanical and biochemical properties of the cell wall and cuticle. Individuals whose work focuses on the characterization of composition, biogenesis of the plant cell wall are encouraged to apply. Candidates should have a Ph.D. in plant biology or a related field, a comprehensive understanding of plant biology, and contemporary analytical techniques. A working knowledge of GC/MS techniques will be advantageous. The position is for 30 months; the annual salary is $25,000. Send a letter of application; curriculum vitae; the names, phone numbers, and e-mail addresses of three scientists willing to write letters of recommendation; and a description of research interests to Dr. Karl H. Hasenstein, Department of Biology, University of Southwestern Louisiana, Lafayette, LA 70504-2451; telephone 318-482-6750, fax 318-482-5834, e-mail hasenstein@usl.edu.

Postdoctoral or Technician Position
Duke University, Durham, North Carolina
(Received 06/22)
Professor M. C. Pirrung seeks a postdoctoral fellow or technician with a background in plant enzymology. Experience in protein extraction/purification and assays is desirable. The research is focused on ethylene biosynthesis, particularly aminocyclopropanecarboxylic acid (ACC) synthase. The project will address enzyme isoforms, their inhibition, and their expression in different tissues. Send curriculum vitae, publication list, and references (with contact information) to Department of Chemistry, Duke University, PO Box 90346, Durham, NC 27708-0346; fax 919-660-1591.

Postdoctoral Position
Uppsala University, Uppsala, Sweden
(Received 06/26)
A postdoctoral position for two years is available to participate in studies on plant embryonic gene regulation using a well-characterized *Brassica* storage protein promoter as a model. Transcription factors are isolated using the one-hybrid and reversed null-hybrid yeast systems. Factors are further characterized by transformation of Arabidopsis and identification of null mutants. Excellent facilities, equipment, and space are available for research. Candidate should have Ph.D. and experience in molecular biology. Review of applications will begin August 1, 1998, and will continue until the position is filled. Send application letter, resume, and list of three references to Lars Rask, Department of Medical Biochemistry and Microbiology, Uppsala University, Box 575, S-751 23 Uppsala, Sweden; telephone +46-18-4714335, fax +46-18-4714975, e-mail Lars.Rask@medkem.uu.se.

Postdoctoral Research Associate Position
University of California, Davis
(Received 06/29)
Candidate should have demonstrated experience with genomic and cDNA library construction, PCR, and nucleic acid hybridization techniques. Flow cytometry or confocal microscopy experience is helpful. An interest in plant or symbiotic development is valued. A Ph.D. is required. Two-year position to start July/August 1998. Salary scale is commensurate with experience. Please send curriculum vitae and a brief statement of research interests, with names and addresses of two references, to amberry@ucdavis.edu, or to Alison M. Berry, Department of Environmental Horticulture, University of California, Davis, CA 95616. For more information, telephone 530-752-7683, fax 530-752-1819.

Postdoctoral Position
University of Minnesota, St. Paul
(Received 06/29)
A postdoctoral position is available beginning October 1998, to study the biochemical and molecular responses of white lupin roots to phosphorus stress (*Plant Physiol. 104*:657–665, 1994; *Plant Physiol. 112*:19–30, and 31–41, 1996). Project involves enzyme purification, antibody production, and in situ hybridization under the supervision of Drs. Deborah Allan and Carroll Vance. Strong background in plant physiology and laboratory skills in molecular techniques and protein/RNA purification required. Experience with light and/or electron microscopy desirable. Send curriculum vitae, brief statement of experience and goals, and names and addresses of three references to Dr. Deborah Allan, Department of Soil, Water and Climate, University of Minnesota, St. Paul, MN 55108; e-mail dallan@soils.umn.edu. Application review begins August 30, 1998. The University of Minnesota is an equal opportunity educator and employer.

Postdoctoral Position
University of California, Davis
(Received 06/30)
A postdoctoral position is available to study molecular mechanisms of auxin action. We are focusing on the AUX/IAA class of early auxin-inducible genes in Arabidopsis, which encode short-lived nuclear proteins with properties reminiscent of transcription factors (Abel et. al., *J. Mol. Biol. 251*:533–549, 1995; Abel and Theologis, *Plant Physiol. 111*:9–17, 1996). AUX/IAA proteins interact with auxin response factors (ARFs) and are proposed to regulate secondary gene expression in response to auxin. Current research centers on biochemical aspects of AUX/IAA protein function and regulation. Candidates must have a strong background in protein biochemistry and molecular biology. Please send a curriculum vitae, a cover letter describing research experience and interests, and the names of three references to Steffen Abel, University of California, Davis, Department of Vegetable Crops, One Shields Avenue, Davis, CA 95616; telephone 530-752-5549, fax 530-752-9659, e-mail sabel@ucdavis.edu. The University of California is an affirmative action/equal opportunity employer.

Postdoctoral Position
Oklahoma State University, Stillwater
(Received 07/01)
A postdoctoral position is available starting August 1, 1998, to study the mechanisms of nuclear and intercellular trafficking of viroids and viruses using molecular, genetic, and cellular approaches. A Ph.D. with training in plant molecular biology and/or plant molecular virology is required. Experience in mutagenesis, PCR, and DNA cloning is essential. Interested candidates should send a letter of interest, a curriculum vitae, and a list of three references with addresses, phone numbers, and e-mail addresses to Biao Ding, Department of Botany, Oklahoma State University, Stillwater, OK 74078; telephone 405-744-9508, fax 405-744-7074, e-mail bxding@osuunx.ucc.okstate.edu. Oklahoma State University is an equal opportunity/affirmative action employer.

Research/Teaching Postdoctoral Fellowship
Knox College, Galesburg, Illinois
(Received 07/03)
This two-year position combines a traditional postdoc and sabbatical leave replacement, ideal preparation for a career at a primarily undergraduate institution. I investigate heat shock–induced selective destabilization of secretory protein mRNAs in barley aleurone. Molecular approaches are used to understand the destabilizing mechanism (transformation, rtPCR, cloning). Teaching involves four courses (2X introductory cell, non-majors and 300-level course of choosing). Submit curriculum vitae, research plus teaching statement, and three references to Mark Brodl, Biology Department, Knox College, Galesburg, IL 61401; e-mail mbrodl@knox.edu. Knox College is an equal opportunity employer.

Postdoctoral Position
University of Arizona, Tucson
(Received 07/06)
A postdoctoral position is available to study homology-based control of gene silencing in plants. Minimum qualifications: Ph.D. in plant molecular genetics or related discipline; current eligibility to work in USA. Please send curriculum vitae, statement of research accomplishments, and names of three references to Rich Jorgensen, Department of Plant Sciences, University of Arizona, Tucson AZ 85721-0036; e-mail raj@ag.arizona.edu.

Postdoctoral Position
Wageningen Agricultural University
Wageningen, The Netherlands
(Received 7/08)
Upon herbivory many plants release volatiles that attract predators of the herbivore. One of the compounds identified in these volatile mixtures is a C_{11} homoterpene, which is probably derived from nerolidol, an acyclic sesquiterpene alcohol. The time course of the induction of nerolidol synthase activity upon herbivory will be studied and compared with the release of the homoterpene. The enzyme will be purified and characterized and the encoding gene isolated for a molecular characterization of the herbivore-induced regulation of nerolidol synthase activity. This is a six-month postdoctoral position for a non-Dutch candidate with experience in biochemical and molecular research on plants, and it should start in 1998. Contact Dr. Harro Bouwmeester, Research Institute for Agrobiology and Soil Fertility (AB-DLO), PO Box 14, 6700 AA Wageningen; fax +31 317 423110, e-mail h.j.bouwmeester@ab.dlo.nl.

Postdoctoral Position
University of Florida, Lake Alfred
(Received 07/09)
A postdoctoral position in plant physiology/biophysics is available at the Citrus Research and Education Center of the University of Florida. This position is to be filled by August 1, 1998, but will remain open until a suitable candidate is found. Applicants should have a Ph.D. in plant physiology, biophysics, horticulture, or related fields. The candidate will coordinate a two-year grant-supported research program on foliar applied urea in citrus. The fundamental mechanisms and practical ramifications of cuticular penetration will be explored. The influence of environmental conditions, spray formulation, and deposit characteristics on cuticle penetration and leaf uptake will be determined. Starting salary is $30,000 plus benefits. Some background in physical sciences is preferred. Interested candidates should send curriculum vitae, publication list, and names of three references to Dr. Jim Syvertsen, Citrus Research and Education Center, University of Florida, 700 Experiment Station Road, Lake Alfred, FL 33850-2299; e-mail jmsn@icon.lal.ufl.edu.

Postdoctoral Position
USDA-ARS, Fargo, North Dakota
(Received 07/09)
A two-year postdoctoral position is available to conduct research on changes in chromatin composition, structure, and function during potato tuber endodormancy especially as they relate to transcriptional repression. Specific research topics will include changes in histone acetylation, DNA methylation, and in vitro chromatin reconstitution studies. Candidates should have a strong background in plant biochemistry and molecular biology. Starting salary is $38,593, plus benefits. Please send curriculum vitae, a statement of research experience, and three letters of reference to Dr. J. C. Suttle, USDA-ARS-NCSL, PO Box 5677, Fargo, ND 58105-5677; telephone 701-239-1257, fax 701-239-1349, e-mail jsuttle@badlands.nodak.edu. USDA-ARS is an equal opportunity employer. Women and minorities are encouraged to apply.

Postdoctoral Position
Washington State University, Pullman
(Received 07/10)
A postdoctoral position in enzymology is available. Candidate will be proficient in enzyme mechanisms, with a degree in chemistry, biochemistry, or a related field. The position will involve research on phenylpropanoid coupling mechanisms and post-coupling modifications. Applicants must have good research, writing, and communication skills and should be able to work independently. The appointment is for up to three years, and the salary is commensurate with experience. Applications will be accepted from July 1998 onward until a suitable person is identified. Please send a cover letter, curriculum vitae, and three letters of recommendation to Dr. Norman G. Lewis, Institute of Biological Chemistry, Washington State University, PO Box 646340, Pullman, WA 99164-6340; telephone 509-335-8382, fax 509-335-8206, e-mail lewisn@wsu.edu. Washington State University is an equal opportunity employer.

Postdoctoral Position
Washington State University, Pullman
(Received 07/10)
A postdoctoral position in plant molecular biology is available. Candidate will be proficient in standard molecular biology and plant transformation techniques, with a degree in molecular biology, biochemistry, chemistry, or a related field. The position will involve research on phenylpropanoid coupling mechanisms and post-coupling modifications. Applicants must have good research, writing, and communication skills and should be able to work independently. The appointment is for up to three years, and the salary is commensurate with experience. Applications will be accepted from July 1998 onward until a suitable person is identified. Please send a cover letter, curriculum vitae, and three letters of recommendation to Dr. Norman G. Lewis, Institute of Biological Chemistry, Washington State University, PO Box 646340, Pullman, WA 99164-6340; telephone 509-335-8382, fax 509-335-8206, e-mail lewisn@wsu.edu.

Washington State University is an equal opportunity employer.

Postdoctoral Position
University of California, Riverside
(Received 07/14)
A postdoctoral position will be available October 1, 1998, to investigate the control of translation in plants. The project will focus on a novel RNA-binding protein that enhances translation from viral and cellular mRNAs (see *J. Biol. Chem. 271:*14316). The studies will include protein–protein and protein–RNA analysis between the protein and the translational machinery. The regulatory protein is itself regulated and the genetic analysis of the signaling pathway responsible for controlling the activity of the protein will be studied using transgenic plants exhibiting altered expression levels of the protein. Candidates must have a strong background in molecular biology and/or biochemistry. Send curriculum vitae (by e-mail) and three letters of recommendation to Dr. Daniel R. Gallie, Department of Biochemistry, University of California, Riverside, CA 92521; fax 909-787-3590, e-mail drgallie@citrus.ucr.edu.

Postdoctoral Research Associate
Michigan State University, East Lansing
(Received 07/14)
A three-year postdoctoral position is available immediately, in the Department of Botany and Plant Pathology. The project is in the area of triacylglycerol assembly in developing oilseeds that produce unusual storage lipids and will involve biochemical studies, enzyme purification, gene cloning, and gene expression work. The ideal candidate should have a Ph.D. and familiarity with biochemical and molecular biology techniques. The work will be carried out in the laboratory of Dr. John Ohlrogge. Submit curriculum vitae and references to Dr. Mike Pollard (project P.I.), Department of Botany and Plant Pathology, MSU, East Lansing, MI 48824-1312; telephone 517-355-5237, fax 517-353-1926, e-mail pollard9@pilot.msu.edu.

Postdoctoral Research Associate
University of Minnesota, St. Paul, Minnesota
(Received 07/14)
A postdoctoral position is available to study the effect of altered organic acid synthesis on acid soil and aluminum tolerance in transgenic alfalfa plants. Research will include characterization of plants for gene expression, production of organic acids, level of tolerance, and effect of gene expression on nodulation. A strong background in plant physiology and skills in molecular biology are required. Knowledge and experience in plant tissue culture or soil science would be helpful. Funding is available for two years. Please send a resume and list of three references to Dr. Deborah A. Samac, Department of Plant Pathology, 1991 Upper Buford Circle, St. Paul, MN 55108; telephone 612-625-1243, fax 612-649-5058, e-mail debbys@puccini.crl.umn.edu. The University of Minnesota is an equal opportunity employer.

Postdoctoral Research Associate
The University of Chicago, Chicago, Illinois
(Received 07/16)
A postdoctoral research associate position is available beginning in the early fall of 1998 to study the proteolytic processing of proteins targeted to the plastid. Emphasis will be on the accumulation of novel proteins in the plastid. Both in vitro and in vivo approaches will be used. The applicant should have a strong background in molecular cell biology. Previous experience with transgenic plants would be beneficial, but training will be provided if necessary. Please send a curriculum vitae, research publications, and three letters of recommendation to Gayle Lamppa, Department of Molecular Genetics and Cell Biology, The University of Chicago, 920 E. 58th St., Chicago, IL 60637. The university is an equal opportunity employer.

Postdoctoral Position
University of Arkansas, Fayetteville
(Received 07/19)
A postdoctoral position is available beginning in the fall of 1998 to study signal transduction mechanisms in plant disease resistance *(Genes Dev. 11:*1621–1639, 1997). The project will focus on characterizing pathogen-inducible transcription factors from tobacco and Arabidopsis and determining their role in disease resistance using transgenic and/or mutational analysis *(PNAS 93:*14972–14977, 1996). Candidates should have a Ph.D. with a strong background in plant molecular biology and/or molecular plant pathology. Experience in plant transcription factors, Arabidopsis mutant analysis, and/or molecular biology of disease resistance is preferred. Please send a letter of application, curriculum vitae, and list of three references to Dr. Yinong Yang, Department of Plant Pathology, 217 Plant Science Building, University of Arkansas, Fayetteville, AR 72701; fax 501-575-7601, e-mail yiyang@comp.uark.edu.

Postdoctoral Position
Georg August University, Göttingen, Germany
(Received 07/20)
A postdoctoral position is available for a person (Ph.D.) with a strong background in molecular biology. The task of the successful candidate will be to set up the laboratory of Molecular Ecophysiology in the department of Forest Botany at the faculty of Forest Sciences and Ecology. The candidate will be able to conduct independent research projects, and the position requires participation in the department's teaching and administrative functions. The candidate must have experience with PCR and transformation systems as well as an interest in ecophysiological questions and applied research. The position, which will start in October 1998, is initially available for three years, but it may be extended for an additional three years to achieve a habilitation (German system). Applicants should send a letter of interest, curriculum vitae, publication list, and two references (with contact and e-mail addresses) to Prof. A. Polle, Forstbotanisches Institut, Georg August Universität Göttingen, Büsgenweg 2, D-37077 Göttingen, Germany; fax +49-551-39-2705, e-mail apolle@gwdg.de.

RESEARCH/TECHNICAL POSITIONS (Non-Ph.D.)

Research Technician
Academia Sinica, Taipei, Taiwan
(Received 05/11)
A full-time research technician position is available in a plant molecular biology/biotechnology laboratory at the Academia Sinica in Taiwan. The primary responsibility of this candidate is to produce and analyze transgenic crop plants. Hands-on experience in plant tissue culture and plant transformation is desirable but not essential. For consideration, send your current resume and cover letter to Dr. Jin-Hao Liu, Institute of BioAgricultural Sciences, Academia Sinica, Nankang, Taipei, Taiwan 11529; telephone +886-2-2651-5747, fax +886-2-2651-5600, e-mail liujh@gate.sinica.edu.tw.

Plant Molecular Biologist
Novartis Agribusiness Biotechnology Research, Inc. (NABRI)
Research Triangle, North Carolina
(Received 06/05)
Novartis Agribusiness Biotechnology Research, Inc. (NABRI), a subsidiary of Novartis formed from the merger of Ciba and Sandoz, has an immediate opening for a plant molecular biologist at our state-of-the-art facility in Research Triangle Park, North Carolina. You will work independently to isolate genes and corresponding cDNAs from insertional mutants of plants. Key responsibilities will include analyzing DNA sequences with computer programs (e.g., Sequencher, GCG, Entrez, BLAST), determining functions of predicted gene products, and assessing feasibility of development assays. You must have a B.S. or an M.S. and five years of molecular biology experience. The ability to design strategies for cloning, sequencing, and analyzing complex DNA fragments is essential. A sound understanding of genetics, plant physiology, and biochemistry is desirable. Qualified candidates should e-mail a resume and cover letter to biotech.jobs@cp.novartis.com (indicate Job #9837 in the subject area).

Research Technician
University of North Texas, Denton
(Received 06/16)
A position is open beginning September 1, 1998, for a research technician. The successful candidate will join an interdisciplinary group working on the regulation and genetic manipulation of fatty acid metabolism in cotton. Responsibilities include cotton transformation experiments, transgenic greenhouse management, and general laboratory organization. Immediate goals include development of elite cotton varieties with altered seed oil profiles. The applicant should have a B.S. or an M.Sc. in molecular biology, plant physiology, or related discipline. Send resume to Kent Chapman, Department of Biological Sciences, University of North Texas,

Denton, TX 76203-5220; fax 940-565-4136, e-mail chapman@unt.edu.

Scientist
Monsanto Company, Chesterfield, Missouri
(Received 06/18)
We are seeking a highly motivated scientist at the M.S./B.S. level to join our research discovery team. The ideal candidate will have a solid understanding of biochemistry and research experience in several of the following areas: protein purification and characterization, recombinant protein expression, enzyme assays, HPLC/FPLC, SDS-PAGE, and immunoassays. Experience with plant systems is desirable but not required. The successful candidate should be capable of excelling in both independent research projects as well as in highly collaborative team projects. Monsanto offers competitive salaries, excellent benefits, and relocation expenses. More importantly, we offer real career growth opportunities for M.S./B.S.-level scientists. Interested candidates should send, fax, or e-mail their curriculum vitae to Tedd Elich, Monsanto Company, AA2G, 700 Chesterfield Parkway North, Chesterfield, MO 63198; fax 314-737-7670, e-mail tedd.d.elich@monsanto.com.

ASSISTANTSHIPS, FELLOWSHIPS, INTERNSHIPS, ETC.

Graduate Assistant
University of Arkansas, Fayetteville
(Received 05/04)
A graduate assistant position is available to research the effects of environmental stresses on physiological processes related to drought tolerance and yield formation. Studies will include plant response to drought, foliar application, and absorption of glycine betaine; use of adjuvants; and anatomical examination of the leaf cuticle. Research will include field and controlled environment studies, data collection and analysis, and report writing. Opportunities exist for working and communicating with agrochemical industries. Experience with cotton is desirable but not necessary. A B.S. or an M.S. in plant or crop physiology or related degree is required. The stipend is $12,000 with a B.S. degree and $13,000 with an M.S. degree, plus fringe benefits. The position is available immediately. Send letter of application, resume, official transcripts, and names and addresses of three references to Dr. Derrick M. Oosterhuis, Altheimer Laboratory, 276 Altheimer Drive, University of Arkansas, Fayetteville, AR 72704; telephone 501-575-3979, fax 501-575-3975, e-mail oosterhu@comp.uark.edu.

Graduate Assistantship
University of Florida, Gainesville
(Received 05/17)
A graduate research and teaching assistantship is available in the Horticultural Sciences Department, University of Florida, Gainesville. The assistantship is at the Ph.D. level for a candidate with a master's degree. Research work will focus on vital metabolic pathways in plants that are potential targets for herbicide action. Research methods include protein purification and enzyme assays, cDNA cloning, and metabolic engineering. The ideal candidate will be motivated in plant physiology research as well as interested in assisting in undergraduate horticulture laboratory and field classes. The assistantship is restricted to U.S. citizens and permanent residents only and requires a minimum total score of 1000 in the verbal and quantitative parts of the GRE. The assistantship will pay $12,000 per year. The start date is negotiable. Information on graduate studies at the University of Florida, Gainesville, can be obtained from http://web.ortge.ufl.edu/education/. To apply, please send a curriculum vitae and the names of three references to Dr. "Saba" B. Rathinasabapathi, Assistant Professor, Horticultural Sciences Department, University of Florida, Gainesville, FL 32611-0690; telephone 352-392-3991, fax 352-392-5653.

Graduate Research Assistantship
Oklahoma State University, Stillwater
(Received 05/18)
A graduate assistantship is immediately available through the Department of Plant and Soil Sciences. The assistantship carries a stipend of $16,500 per year (including a $4,000 per year scholarship) for two years for an M.S. or a Ph.D. student. U.S. residents are encouraged to apply, but international students will also be considered. The project involves isolation and characterization of novel leaf-rust induced genes in wheat using the differential display technique. The project seeks to better define the wheat–rust interaction at the molecular level. Excellent research laboratory facilities are available in Noble Research Center, including the NSF-funded Recombinant DNA/Protein Facility and the Plant Transformation Facility, all located within a one-minute walk of the laboratory. The candidate should have good academic credentials. Lab experience in molecular biology is preferred, but training will be provided for qualified students in specific techniques. Interested candidates should contact Dr. Anderson at mpa@soilwater.agr.okstate.edu, or at the Department of Plant and Soil Sciences, Oklahoma State University, Stillwater, OK 74078; telephone 405-744-6939. Further information will be requested.

Graduate Assistantship
Oklahoma State University, Stillwater
(Received 07/01)
A graduate assistantship (RA/TA) is available starting in the fall of 1998 or the spring of 1999 for a candidate pursuing a Ph.D. in the area of plant cell/molecular biology. The candidate will be working in the area of intercellular trafficking of proteins, nucleic acids, and viruses through plasmodesmata in higher plants using molecular, microinjection, and microscopic techniques. Interested candidates should send a letter of interest, a curriculum vitae, and a list of three references with addresses, phone numbers, and e-mail addresses to Biao Ding, Department of Botany, Oklahoma State University, Stillwater, OK 74078; telephone 405-744-9508, fax 405-744-7074, e-mail bxding@osuunx.ucc.okstate.edu. Oklahoma State University is an equal opportunity/affirmative action employer.

Graduate Student Research Assistantship
Texas Tech University, Lubbock
(Received 07/08)
A research assistantship at the M.S. or Ph.D. level is available immediately to conduct research on the physiological, biochemical, and molecular aspects of the control of starch accumulation in cotton roots and stems. The project involves collaboration between a physiologist/biochemist (A. S. Holaday), an agronomist/physiologist (D. Krieg), and a molecular biologist (R. Allen). The study provides an excellent opportunity for students to become familiar with how an agronomic problem can be investigated at the whole-plant, cellular, and molecular levels. The assistantship is $14,000 for an M.S. or $15,000 for a Ph.D. student per year for two years, with plans to request additional funding. To apply, send a letter indicating your research interests; a curriculum vitae including GRE scores; graduate and/or undergraduate GPA; and the names, addresses, and phone numbers of three references to Dr. A. Scott Holaday, Department of Biological Sciences, Texas Tech University, Lubbock, TX 79409-3131; telephone 806-742-2657, fax 806-742-2963, e-mail bdash@pop.ttu.edu.

Graduate Research Assistantship
Idaho State University, Pocatello
(Received 07/15)
A research assistantship at the M.S. or Ph.D. level is available immediately to investigate photosynthetic processes of Douglas fir as affected by the environment and to use this knowledge to optimize survivorship of tree seedlings used for reforestation efforts in Idaho. The candidate will integrate physiological and molecular research techniques including gas exchange, chlorophyll fluorescence, and biochemical and molecular assays to elucidate the role of environmental stress in determining seedling mortality. Both laboratory- and field-based experiments will be conducted. The assistantship carries a stipend of $14,000 per year in addition to a tuition and fee waiver for three years. Interested candidates should send a letter of interest, curriculum vitae, and a list of three references with addresses, phone numbers, and e-mail addresses to Dr. Mary Poulson, Department of Biological Sciences, Idaho State University, Campus Box 8007, Pocatello, ID 83209-8007; telephone 208-236-3854, fax 208-236-4570, e-mail poulmary@isu.edu.

Graduate Research Assistantship
Acadia University, Wolfville, Nova Scotia
(Received 07/20)
A graduate research assistantship at the M.Sc. level is available September 1, 1998, to identify antioxidants playing important roles in improving the post-harvest storage life of spinach, concomitant with enhanced nutritional and nutraceutical quality. Proposed research will involve field-and laboratory-based selection trials, enzymic and non-enzymic antioxidant assessment, and determinations of lipid oxidation. Opportunities may also exist to examine the effects of storage conditions, such as low temperature, on antioxidants. Work will take place primarily at the Agriculture and Agri-Food Canada laboratories in

Kentville, Nova Scotia, and at Acadia University. We seek an individual with interests in plant stress and with a background and experience in plant physiology, plant biochemistry, and/or horticulture. The assistantship carries a stipend of $14,000 CDN per annum for two years, stemming from NSERC and industry funding. For further consideration or information, please contact and/or send your curriculum vitae to Dr. Wendy Wismer, Nutrition and Food Science, Acadia University, Wolfville, Nova Scotia B0P 1X0, Canada; telephone 902-585-1421, fax 902-585-1470, e-mail wendy.wismer@acadiau.ca.

Graduate Research Assistantship
Kansas State University, Manhattan
(Repeat)
Contact Dr. Bingru Huang, Division of Horticulture, 2021 Throckmorton Plant Science Center, Kansas State University, Manhattan, KS 66506-5506; telephone 785-532-1429, fax 785-532-6949, e-mail bhuang@oz.oznet.ksu.edu. (Details May/June 1998 *ASPP NEWS)*

Graduate Research Assistantships
New Mexico State University, Las Cruces
(Repeat)
Contact Dr. Ian Ray, Department of Agronomy and Horticulture, MSC 3Q, New Mexico State University, Las Cruces, NM 88003-8003; telephone 505-646-3819, fax 505-646-6041, e-mail iaray@nmsu.edu. (Details May/June 1998 *ASPP NEWS)*

ASPP Headquarters Telephone Extensions and E-Mail Directory

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

Our office telephone number is 301-251-0560

	Ken Beam / ext. 15 kenbeam@aspp.org	Nancy Winchester / ext. 17 nancyw@aspp.org	Susan Chambers / ext. 11 chambers@aspp.org	Estella Caley / ext. 22 estcaley@aspp.org	Sondra Giancoli / ext. 10 giancoli@aspp.org	Crispin B. Taylor / ext. 19 ctaylor@aspp.org	Brian Hyps / ext. 14 bhyps@aspp.org	Annette Kessler / ext. 20 akessler@aspp.org	Kelley Noone / ext. 29 knoone@aspp.org	Deborah Weiner / ext. 18 dweiner@aspp.org
Missing journal issues, books									▼	
Subscriptions, individual*									▼	
Plant Physiology (except missing issues)										▼
THE PLANT CELL										
Disposition of a manuscript								▼		
All other questions (except missing issues)						▼				
Newsletter		▼								
Advertising										
Plant Physiology										▼
THE PLANT CELL						▼				
Newsletter		▼								
Address changes									▼	
Membership applications									▼	
Membership problems									▼	
Accounts payable					▼					
Accounts receivable				▼						
Accounts payable/receivable problems			▼							
Annual meeting			▼							
Public affairs/government relations							▼			
Education							▼			
Society governance	▼									
ASPP Education Foundation	▼									
International issues	▼									
Awards	▼									

*Subscriptions, institutional: Tracey Habich, Fulco, 973-627-2427, ext. 132

ASPPNEWS

American Society of Plant Physiologists
15501 Monona Drive
Rockville, MD 20855-2768 USA

PERIODICALS

ASPP NEWS (ISSN 0279-9936) is published bimonthly by the American Society of Plant Physiologists, 15501 Monona Drive, Rockville, MD 20855-2768 USA, telephone 301-251-0560, fax 301-279-2996. Members' dues include a subscription price of $2 per year to *ASPP NEWS*. Subscription price to nonmembers is $30 per year. Second-class postage paid at Rockville, MD, and at additional mailing offices. Postmaster: Please send address changes to *ASPP NEWS*, 15501 Monona Drive, Rockville, MD 20855-2768 USA.