THE NEWSLETTER OF THE AMERICAN SOCIETY OF PLANT PHYSIOLOGISTS

Volume 27, Number 5

September/October 2000

Daniel Cosgrove Assumes ASPP Presidency October 1

Dr. Daniel Cosgrove, professor in the Department of Biology at Penn State University, became president of the American Society of Plant Physiologists October 1, 2000. He will lead the Society in 2000–01 and continue on as immediate past president in 2001–02. He replaces Deborah Delmer as president. Delmer will continue on as immediate past president in 2000–01.

Cosgrove is a native of Massachusetts and earned a bachelor's degree in botany at the University of Massachusetts in 1974. In 1972, he opted for a junior year at the University of Oregon in Eugene (which he chose in part because it looked like good motorcycling terrain). From 1974 to 1979, he was a graduate student at Stanford University, where he received a Ph.D. in biological sciences. He did postdoctoral stints at the University of Washington and the Nuclear Research Center at Juelich. Germany, In 1983, he joined the Penn State faculty as assistant professor, advancing in rank to associate professor in 1987 and professor in 1991. He has twice escaped PSU for delightful sabbaticals at the University of Goettingen (1989-90) and the Max-Planck Institute for Molecular Plant Physiology (1996-97).

Cosgrove's research deals with the mechanisms of plant cell growth. In the early 1980s he pioneered the use of the pressure microprobe to evaluate hydraulic constraints on cell enlargement. This work led to theoretical and experimental analyses of wall stress relaxation as the key biophysical process controlling cell enlargement. Searching for proteins with wall loosening functions, his group was the first to isolate expansin proteins and to show that they are responsible for the acid-growth behavior of cell walls. Expansin cloning led to the recognition that expansins make up a large multigene family and to the discovery of a second family of expansins that include some notorious grass pollen allergens. Current work in

Cosgrove's lab is focused on the developmental, structural, and evolutionary aspects of the expansin gene superfamily, as well as on biochemical and biophysical studies of additional mechanisms controlling cell wall enlargement.

At Penn State Cosgrove has taught introductory plant



physiology and a variety of more advanced courses on plant growth and development, membrane transport, and laboratory uses of computers. He has served on the editorial boards of *Plant Physiology*. Planta, Plant Cell and Environment, Physiologia Plantarum, and other professional journals and on the governing boards of the American Society for Photobiology and the American Society for Gravitational and Space Biology. He has also served on several USDA competitive grants panels, was director of the USDA panel on plant growth and development in 1995, and has served on an NSF Cell Biology review panel. His awards include an NSF Presidential Young Investigator Award (1984-89), a Guggenheim Fellowship (1989), a Fulbright Senior Professor Award (1990), ASPP's Charles A. Shull Award for outstanding investigations in plant physiology (1991), and an Alexander von Humboldt Research Award (1996-97). In 1993, he was elected a fellow of the American Society for the Advancement of Science. Cosgrove says that the teachers that influenced him most are his 10-year-old son and Paul Green, his graduate adviser. W



- Vicki Chandler Is President-Elect
- **▼** Plant Biology 2000 Meeting Highlights
- **T** Education Foundation Board Approves TV Documentary

CONTENTS

1

Cosgrove Assumes Presidency

3

Presidents' Letter

/1

New Officers

5

Plant Biology 2000

8

Award Honorees

11

Executive Committee Meeting

Television Documentary Approved by Education Foundation

12

ASPP Publishes Plant Biochemistry Textbook

CSWIPP News

Charity Marathon

13

People: Winslow Briggs,

Emmanuel Liscum

ASPP Scores High in CESSE Survey

New Staff

14

Public Affairs

18

Education Forum

19

Obituary

20

Gatherings

23

Jobs

Deadline for

November/December 2000 ASPP NEWS:

October, 10, 2000

Future ASPP Annual Meetings

2001

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

2002

Saturday, August 3, through Wednesday, August 7 Denver, Colorado

2003

Saturday, July 26, through Wednesday, July 30 Honolulu, Hawaii



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

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

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

ASPP OFFICERS & STAFF

President	
Daniel J. Cosgrove	814-863-3892
President-Elect	
Vicki L. Chandler	520-676-8725
Immediate Past President	
Deborah P. Delmer	530-752-7561
Secretary	
Daniel R. Bush	217-333-6109
Treasurer	
Mark R. Brodl	309-341-7477
Chair, Board of Trustees	
Donald R. Ort	217-333-2093
Chair, Publications Committee	
Krishna K. Niyogi	510-643-6602
Chair, Committee on the Status of	
Women in Plant Physiology	010 004 0470
Ann M. Hirsch	310-206-86/3
Chair, Committee on Minority Affairs	000 040 0140
Robert Velkinoweth	323-343-2148
Elected Members	010 616 0707
Rebecca S. Boston	919-313-2/2/
Vicki L. Chandler	
Joe Chappell	606-257-4624
Sectional Representatives Midwestern	
Mark R. Brodl	200 241 7477
Northeastern	307-341-/4//
Carol Reiss	401 942 2075
Southern	401-003-30/ 3
Joyce G. Foster	204 254 2900
Washington, DC	307-230-2007
Janet P. Slovin	301,504,5620
Western	
Dina Mandoli	206-543-4335
PILIN STANTONIA	

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

Fax: 301-279-2996	
Executive director, John Lisack, Jr., ext. 115	ilisark@ason ora
Executive assistant, Donna Gordon, ext. 131	
	dgordon@aspp.org
Director of finance and administration, Susan K. Chambers, ext. 1]]	
Susan K. Chambers, ext. 111	(hambers@aspp.org
Accountant, Sondra A. Giancoll, ext. 140	aianeali@aena ara
Network administrator/Webmaster,	giuncon@aspp.org
Burton Nicodemus, ext. 146	hurton@asnn.ora
aa ().))	
Kelley Noone, ext. 142	knoone@aspp.org
Membership and marketing manager, Kelley Noone, ext. 142 Subscription and fulfillment assistant, May Buch ext. 141	
muly busil, call the	marybush@aspp.org
Accounts receivable specialist, Stephanie Liu-Kuan, ext. 143	
Stephanie Liu-Kuan, ext. 143	shu@aspp.org
Carolyn Freed, ext. 122	Araad@acan ara
Director of public affairs, Brian M. Hyps, ext. 114	tireeu waspp.org
2 NO. 10 1 POWN 2 11 11 11 11 11 11 11 11 11 11 11 11 1	bhyps@aspp.org
Foundation assistant, Junice Jordan, ext. 129	
	jjordan@ospp.org
Director of publications,	_
Nancy A. Winchester, ext. 117	nancyw@ospp.org
Sylvia Braxton Lee, ext. 133	chrayton@acan ara
Mananina editor Plant Physiology	suruxion@uspp.org
Managing editor, Plant Physiology, Melissa Junior, ext. 118	miunior@asan.ora
Science writer, Plant Physiology,	
Science writer, Plant Physiology, Peter Minorsky, 914-437-7438	peminorsky@aspp.org
Production coordinator, Plant Physiology,	
Lauren A. Ransome, ext. 130	ransome@aspp.org
Managing editor, THE PLANT CELL, Beth Staehle, ext. 121	L.,L.@
News and reviews editor, THE PLANT CELL,	beins@aspp.org
Nancy Eckardt, 970-495-9918	neckardt@asan ara
Production Coordinator, THE PLANT CELL,	nocharar Caspp.org
Catherine A. Balogh, ext. 116	
Senior manuscript coordinator, Annette Kessler, e	
	akessler@aspp.org
Manuscript coordinator, Kimberly A. Davis, ext. 12	/4 kimdewie@aenv
Manuscript coordinator, Stephanie M. Butto, ext.	kunaaviswospp.org 125
,	

butto@aspp.org



Looking Back, Moving Forward

This issue's column is written by outgoing president Debby Delmer and her successor, Dan Cosgrove.

From Debby Delmer

ince this is my last message to you as president of ASPP, I'd like to take this opportunity to reflect on what I think has been accomplished in the past year by the Society and what the experience has meant to me personally. From my own point of view, I can say that before taking office, I never imagined just how much work this job would entail, but I also never imagined just how interesting it would be or how much I would learn from the experience. As members of the Operations Subcommittee, all three of your presidents—future, past, and present—along with the executive director and chair of the Board of Trustees, meet or teleconference frequently to discuss issues that arise in the day-to-day running of the Society and to discuss larger issues for presentation to the Executive Committee or Board of Trustees for consideration. "Ops," as we call it, does not make any financial decisions—these are in the hands of the Executive Committee—but, with a Society as complex as ours has become, it serves a vital role in the daily operation of ASPP. It is also the place where the president-elect "learns the ropes," and it provides an opportunity for the past president to pass on the wisdom he or she has gained through several years of experience. Although each new presidentelect knows some aspects of ASPP activities, none ever knows all aspects, and it is a richly rewarding experience to get to know the staff, editors, and members of the committees who carry out ASPP's goals and to see the breadth and depth of their involvement and the impact they have on the field of plant biology.

This year has been one of great activity for ASPP. With the burgeoning debate on genetically modified organisms (GMOs), Public Affairs has never worked so hard or been so visible on Capitol Hill and elsewhere. The committee and staff have called on many of our members to testify and to speak out on this and other vital issues that affect us all. Their hard work in this area, coupled with their effective lobbying for improved federal grant funding for plant science, has truly made ASPP the major voice for plant science in the United States.

We can also be very proud of our new major textbook, *Biochemistry & Molecular Biology of Plants*. It is everything we hoped it would be and more. In fact, we sold more than twice the number of copies we predicted at the annual meeting in San Diego! I personally see what a valuable tool this work will be to me, both for teaching and for my own professional edification.

The textbook adventure brings up another wonderful aspect of our Society. We are blessed with substantial endowments that grow each year and make it possible for us to take on such expensive projects. We didn't take on the development and production of a major textbook/reference work to make money, and we may in fact lose money (though not if each of you buys a copy!). Rather, we did it as a service to our members, and having the endowments to back us up allowed us to undertake this project and still be fiscally responsible.

Similarly, a decision has been made by the Education Foundation board of directors. under the leadership of Bob Goldberg, to produce a major film that will cover the history of agriculture and plant breeding to educate the public about where its food really comes from. You'll hear a lot more about this project in the coming year as it develops. To me, it is one of the most exciting ventures we have ever undertaken, and here again, having the financial resources to make it possible is a blessing. Another source of funds to help move this project forward is the generous gift of \$200,000 from the estate of Bill Klein, which the Executive Committee has approved for production. Donations such as this and the gift of the Gude home that is now our beautiful headquarters are an enormous benefit to our Society. To those members who are doing estate planning. I urge you to keep your Society in mind!

Finally, the Vote for the Name Change is coming soon! I don't think you elected me to tell you how to vote on this issue—you must each decide for yourself—but I will say that I personally am very much in favor of the change to the American Society of Plant Biologists, for the many reasons I've outlined before. I just want to add that, in addition to the desire to attract the younger generation, the change seems to me important for the simple reason that the average person on the street and the congressman on the Hill can much better identify with "biologists." I loved Ann Hirsch's comment on our Web site:

"Real" people (like my 83-year-old mother) understand what a plant biologist is, but they do not understand what a plant physiologist is. I have had several people ask me when I was flying off to ASPP meetings what kind of conference I was attending. When I responded, they assumed I was off to some meeting to improve factory or oil refinery (i.e., plant) performance. The bottom line is that a name change to ASPB allows the public to know what we are doing, and frankly, I believe we have an obligation to do just that.

Conclusion: Listen to my mother.

In closing, I just want to say that, in spite of the work, I really enjoyed this year and have found that service such as this has strengthened my affection for ASPP, for all of you as members, and for plant biology as a whole. So now I pass the reins to your new president, Dan Cosgrove, with wishes to him, and to all of you, for a successful new

millennium for the field of plant biology.

From Dan Cosgrove

ince I became a member in the late 1970s, ASPP has grown in many ways: membership, publications, public affairs, outreach, budgets, dues, the kinds of science our members do-all of these have expanded significantly. You can see the remarkable changes in science content, for example, in the sections that make up each issue of Plant Physiology. To be sure, there have been growing pains, some that still ache perhaps. Nonetheless, I think the changes have been vital and ultimately driven by the success of our science. The fact that ASPP gets involved in the GMO debate and in public-sector funding of plant biology reflects the reality that our science matters. It has a growing impact on the world outside plant physiology and has become intertwined with many other fields of science and technology. This will only accelerate further as the genome projects expand, uniting many formerly separate disciplines. It is an exciting time to be in this field.

This brings me to the name change. We will have a vote on this issue soon, and I urge you to think about the future in deciding how to vote. Our Society now encompasses many people who believe that

continued on page 4

"plant biology" is a clearer term for what they do. This trend will continue if ASPP is successful in its mission. Having listened carefully to both sides of the debate, I believe we have outgrown our traditional name. There isn't a perfect name for what we do, but I believe that ASPB is the best choice.

Lastly, I think it is important for ASPP to take better advantage of the Internet. It has greatly amplified our ability to reach out to our members, to other scientists, to students, and to the public. We've made a great start with the electronic publication of our journals, but additional services to our members can be offered via the Web site. As I write this, we are making plans to implement electronic voting, starting with the name change issue, in the hope that this will increase the total vote (the experience of other organizations). Also, by the time this letter is published, we should have Webbased videos available for some of the talks presented at Plant Biology 2000. If you like what you see, let me know. Furthermore, if

you have ideas about using the Web to further the mission of our Society, send me an e-mail message—particularly if you want to help with this task. **W**

Debby Delmer University of California, Davis dpdelmer@ucdavis.edu

Dan Cosgrove Pennsylvania State University dcosgrove@psu.edu

Vicki Chandler Elected to Lead ASPP in 2001–02

Roger Hangarter Elected to Executive Committee 2000-03

Results of the 2000 ASPP election of officers were announced in late July at Plant Biology 2000. Dr. Vicki L. Chandler, professor in the Department of Plant Sciences at the University of Arizona, assumed the office of president-elect on October 1, 2000. She will lead the Society as president in 2001–02 and will continue on as immediate past president in 2002–03.

Chandler was raised in California and earned her bachelor's degree in biochemistry at the University of California at Berkeley in 1978. She received her Ph.D. in biochemistry in 1983 from the Uni-



versity of California at San Francisco. From 1983 to 1985, she was a National Science Foundation plant postdoctoral fellow in the laboratory of Virginia Walbot in the Department of Biological Sciences at Stanford University. From 1985 to 1997, she moved through the professorial ranks in the Department of Biology and the Institute of Molecular Biology at the University of Oregon in Eugene. In 1997, she moved to the Department of Plant Sciences at the University of Arizona. She is also a member of the Interdisciplinary Program in Genetics and has a joint appointment in the Molecular Cell Biology Department at the University of Arizona.

Chandler's research focuses on gene regulation in plants, using the anthocyanin biosynthetic pathway in maize as a model system. In addition, she uses the easily assayed phenotypes of the anthocyanin genes to study regulation of transposable elements and gene silencing mechanisms. Her early work on the epigenetic control of *Mutator*

transposable elements demonstrated a strong correlation between transposon silencing and DNA methylation. Currently, both genetic and biochemical approaches are being used to determine how regulatory genes of the pathway, encoding transcription factors that activate the biosynthetic genes, are themselves regulated by tissue-specific and environmental signals. Mutant screens have identified at least one previously unknown regulator of the pathway and identified putative candidate genes that regulate the known transcription factors. Another major ongoing effort is to use both forward and reverse genetic approaches to identify and clone genes involved in chromatin-level gene regulation and determine how they modulate transposon activity and gene silencing. Using a genetic screen, Chandler's laboratory has isolated mutations in several genes that affect multiple epigenetic phenomena, such as paramutation and transposon silencing.

At the University of Oregon, Chandler taught introductory genetics and biochemistry lecture and lab courses to biology majors, as well as advanced-level undergraduate courses in genetics and molecular genetics. At the University of Arizona, she has been teaching a graduate-level course in genetics for the Molecular Cell Biology Department and an advanced genetics course for plant sciences graduate students. She has served on numerous competitive grant panels including the NSF Plant Biology Postdoctoral Fellowship Panel; the DOE Biological Energy Research Program Advisory Panel; the NSF Eukaryotic Genetics Panel; the NIH Special Reviewer Genetics Study Section and Molecular Cytology Study Section, NIH Study Section Genetic Training Grants; the NSF National Young Investigator Panel; the USDA Plant Genetic Mechanisms Panel; and the NSF Waterman Award

Committee. She is currently serving on the editorial boards of Plant Physiology and Genetics. She has been active in several societies and was on the Genetics Society board of directors from 1995 to 1997. She is currently on the board of directors of the International Society of Plant Molecular Biology. In 1994, she chaired the Plant Molecular Biology Gordon Conference and co-founded and co-chaired the Epigenetics Gordon Conference in 1995. She is on the board of trustees of the Gordon Research Conferences (1997-2003) and is currently vice chair of the board. Her awards include the following: 1983-85, NSF Plant Biology Postdoctoral Fellowship: 1985-90, Presidential Young Investigator Award Recipient; 1988-91. Searle Scholar Award Recipient: and 1991-96, NSF Faculty Award for Women Scientists and Engineers.

Roger Hangarter

Roger P. Hangarter began his term as elected member of the Executive Committee on October 1. He is associate professor in the Department of Biology at Indiana University, Bloom-



ington. His research interests involve physiological and molecular mechanisms controlling plant growth and development, including mechanisms by which plants perceive and respond to environmental stimuli such as light and gravity. His activities on behalf of ASPP include membership on the *Plant Physiology* editorial board from 1993 to 2000, the ad hoc Publications Visions Subcommittee in 1998, and the Program Committee from 1996 to 2000.

Plant Biology 2000: Seeding the Future

More than 1,500 attendees converged during July on the Town & Country Resort and Convention Center in the Mission Valley area of San Diego, California, for Plant Biology 2000, ASPP's annual meeting. Several events were also held in conjunction with the annual meeting of the Phycological Society of America (PSA). Attendees enjoyed the sunny, warm, dry climate of southern California and participated in numerous scientific and social events.

The format for Plant Biology 2000 was modeled after the more dynamic meeting schedule and featured 17 minisymposia drawn from submitted abstracts. Minisymposia topics were selected by the Program Committee from member suggestions and emerging "hot topics." As in the past, key features of our program included the five major symposia. Here are some highlights!

Special President's Symposium: Plants Through the Millennia

One of the major highlights of Plant Biology 2000 was the President's Symposium, held Wednesday, July 19. This special event, developed by ASPP President Debby Delmer, examined plants of the past, present, and future.

Today's exciting advances in plant genomics and molecular biology allow researchers to apply new tools to study the natural evolution of land plants and also the directed evolution of the major crop species. One of the foremost experts on the origin of land plants, Linda Graham of the University of Wisconsin, kicked off the symposium with a comprehensive overview of our state of knowledge of the evolution of land plants. Following this, Jonathan Wendel of Iowa State University, whose own work focuses on the evolution of cotton, discussed models for how humans have intervened in the evolutionary process to select the major crop plants used today; his talk also gave insight into how the polyploid nature of many of these crop plants allows us to analyze the fate of duplicated genes and genomes.

Roger Leigh of the University of Cambridge spoke about mineral nutrition as a bridge between the past and present. He first discussed early research on the nutrient requirements of plants and fledgling efforts to understand processes of ion uptake. His discussion continued with a look at how the modern tools of molecular biology have opened exciting new prospects for improving the efficiency of mineral uptake and utilization.

Finally, Bob Goldberg, of the University of California, Los Angeles, bravely agreed to

take up the challenge to give us his views on what "Plants of the Future" may look like. One of the most imaginative members of the Society, Bob always offers thought-provoking insights into plant processes. It is interesting to compare how the breeders of the past approached directed evolution with the approaches Bob foresees scientists taking in the new millennium. (See page 17 for an article on Bob's talk.)

The symposium was well attended and provocative. In addition, an audio/video webcast of the presentations and PDF files of the slides are available for viewing for a limited time at the Hot News section of ASPP's Web site.

ASPP's long-awaited textbook/reference work, *Biochemistry & Molecular Biology of Plants*, by Bob B. Buchanan, Wilhelm Gruissem, and Russell L. Jones, debuted to an enthusiastic crowd at Saturday night's opening reception. Sales during the meeting exceeded all expectations, with more than 600 attendees purchasing copies on the spot. See page 12 for more on *Biochemistry & Molecular Biology of Plants*.

Online Abstracts, Schedule, and Program

The electronic submission of abstracts once again made it possible for the abstracts and program schedule to be available in a fully searchable and printable format accessible through ASPP's Web site several months before the meeting. Many attendees utilized the feature, which let them create and customize a personal meeting agenda. A complete abstract supplement and printed program was distributed at the meeting.

Exclusive Afternoon and Evening Poster and Exhibit Sessions

More than 1,000 ASPP posters were on display in the exhibit hall alongside the PSA posters for four full days. These posters and exhibits were featured at an exclusive four-hour poster and exhibit session on Sunday afternoon and again on Monday evening at an event that included free beer and snacks.

Variety of Workshops

Plant Biology 2000 featured workshops in several strategic areas. The Committee on Public Affairs sponsored a workshop on Saturday entitled "Perspectives of Science Leaders." This session was very well attended and featured the distinguished Dr. Gordon Conway, president of the Rockefeller Foundation. Dr. Conway was also awarded the 2000 ASPP Leadership in Science Public Service Award.

Two special careers workshops organized by the Committee on the Status of Women in Plant Physiology and targeted to postdoctoral and graduate students were held Monday evening, July 17. Participants chose between "Where Are the Jobs?" and "How to Get the Jobs." Both workshops were very well attended.

The education workshop was held Wednesday morning, July 19, in a minisymposium time slot. Sponsored by the ASPP Education Committee, the workshop was led by Diane Ebert-May, director of the Lyman Briggs School and a professor in the Department of Botany and Plant Pathology, at Michigan State University. Faculty, postdoctoral fellows, and graduate students were invited to participate in an interactive event that explored multiple ways of assessing and evaluating student learning. Examples ranging from both large- and small-class teaching with extensive writing and problem-based learning approaches, to short classroom-assessment techniques, were modeled with active learning strategies. During this session, evaluation tools were developed for scoring various types of assessments that included written responses, oral presentations, concept maps, and research proposals.

A special mini-symposium on "Using Computer Modeling of Metabolism in Research and Engineering" was featured. It was composed of three 30-minute seminars on building, testing, and using metabolic models. Help sessions featuring hands-on use of metabolic models designed in Visual Basic followed the seminars. The sessions were well received.

The Minority Recruitment and Retention in the Plant Sciences Workshop provided a forum to discuss opportunities, challenges, and strategies for recruitment, retention, and promotion of minority groups in the plant sciences. The panel consisted of faculty, students, and administrators who shared their perspectives on these issues.

The special mini-symposium on "Entrepreneurial and Research Opportunities for Agricultural Biotechnology" was organized by Maarten Chrispeels and featured speakers from diverse companies in the San Diego area representing a wide array of research objectives and new technologies.

The U.S. Government Grants/Funding Workshop provided plant biologists with information about research funding opportunities from federal agencies. The agenda included presentations by representa-

continued on page 6

tives from the U.S. Department of Agriculture—National Research Initiative, the National Science Foundation, the U.S. Department of Energy, the National Institute of Standards and Technology, and the National Aeronautics and Space Administration. Agency program objectives and research initiatives were highlighted.

Luncheons and Speakers

The conference also featured two luncheon programs. On Sunday, July 16, the Committee on Minority Affairs sponsored a luncheon with Dr. Frank Greene, associate director, North Atlantic Area, Agricultural Research Service, USDA. The Committee on the Status of Women in Plant Physiology sponsored a luncheon on Monday, July 17, featuring Dr. Debra R. Rolison, who heads Advanced Electrochemical Materials at the Naval Research Laboratory. Rolison is concerned about the dearth of women in U.S. chemistry departments and recently wrote an editorial on the topic in the March 13, 2000, edition of Chemical and Engineering News. Many of the problems that face women chemists also face women in biology, and Rolison addressed these issues.

Earlier Time and Spotlight for Awards Symposium and Ceremony

The ASPP Awards Symposium and Ceremony was highlighted as the opening event on Saturday afternoon, July 15.

President Debby Delmer announced the award winners for 2000, and Dr. Sabeeha Merchant gave the ASPP Shull Award address, "Mars and Venus: Who Won?"

Plant Biology 2000 Undergraduate Networking Pre-Mixer/Poster Session

This new event was sponsored by the ASPP Membership Committee and was free for all undergraduate attendees. Many of the participants brought their posters and were able to network informally with each other to learn how to get the most out of Plant Biology 2000.

Job Fair

Many attendees visited the on-site job information exhibits sponsored by Novartis and available throughout the meeting. The postings at the Plant Biology 2000 Placement Service also drew lots of attention.

Exhibits and Internet Cafe

An excellent selection of exhibitors presented their products and services for three days. Attendees and exhibitors enjoyed the new format that featured an exclusive afternoon and evening of exhibits and posters. An Internet Cafe was also available in the exhibit hall to allow attendees to check e-mail throughout the meeting. This new feature was very popular.

Special Functions

Other functions at the meeting included the Small Colleges/Primarily Undergraduate

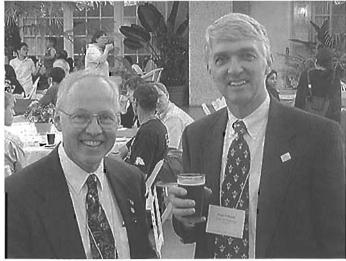
Institutions Breakfast, which had a strong turnout and discussion on Sunday morning; the Plant Runners Stampede 5k and 10k Fun Run on Tuesday morning, which took place in the beautiful Mission Bay area of San Diego; and the Margaritaville Beach Party with live dance music and plenty of good food and libations, held at Embarcadero Park on San Diego's harbor front on Tuesday evening.

Plant Biology 2001

This exciting and enjoyable meeting is now a memory, and the Program Committee is already immersed in planning Plant Biology 2001, which will be held July 21–25, 2001, in Providence, Rhode Island, at the Rhode Island Convention Center. This meeting will be the quadrennial joint annual meeting of the American Society of Plant Physiologists and the Canadian Society of Plant Physiologists. Sessions and activities of mutual interest will be planned. We look forward to an interesting week of science and other diversions in the heart of New England! Mark your calendars and watch the ASPP NEWS and Web site for further details!

Dan Bush ASPP Secretary and Program Committee Chair Susan Chambers ASPP Program Committee Staff Liaison

Plant Biology 2000!



Karl Schubert and Roger Beachy, winner of the Dennis Robert Hoagland Award.



From left to right: ASPP members Adam Wende, Jon Monrae, Mark Brodl, Rick Nelson, and Ken Helm pose with Melissa Junior (managing editor of *Plant Physiology*).

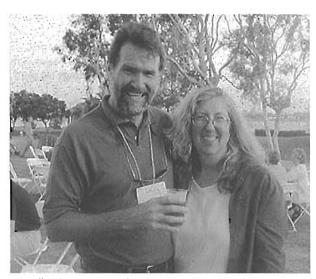


Jim Shinkle and Elisabeth Gantt.

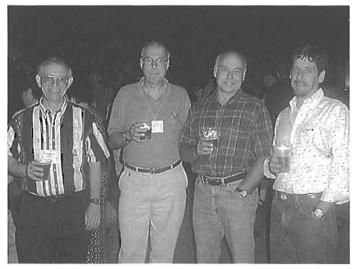




Pam Green and Pedro Gil at the opening reception.



Ken Bradford, former monitoring editor of *Plant Physiology*, and his wife Barbara Zadra celebrated their 19th wedding anniversary during Plant Biology 2000.



Lou Sherman, Jim Siedow, Don Ort, and Bob Wise.



Two seagulls, rumored to be named Gertrude and Heathcliff, appear to have reserved their own table at the scenic Embarcadero Park beach party and dance during the ASPP annual meeting. Word traveled quickly in the local bird community that there were some choice selections on the menu.

Award Honorees at Plant Biology 2000

Following are the citations for the awards that were presented July 15, 2000, at the Annual Awards Ceremony at Plant Biology 2000, the annual meeting of the American Society of Plant Physiologists, held this year in San Diego, California.

Corresponding Membership Award Pierre M. Gadal John V. Jacobsen Bruce Stone

This award, initially given in 1932, provides life membership and Society publications to distinguished plant physiologists from outside the United States. The honor is conferred by election on the annual ballot.

Pierre Gadal's career spans four decades and covers a broad spectrum of interests, ranging from an initial focus on natural products to a later emphasis on carbon and nitrogen metabolism. His work on key enzymes-NADP-malate dehydrogenase, glutamine synthetase, phosphoenolpyruvate carboxylase, and isocitrate dehydrogenasehas been seminal. In particular, he has clarified the localization and isoenzymic composition of a number of enzymes and determined ways in which their activities are regulated. His studies, which range from plant biochemistry to molecular physiology, have shown that light and nitrogen affect the photosynthetic capacity of plants by regulating the transcription and posttranscription of genes for key enzymes of carbon and nitrogen metabolism. Gadal has not only made valuable contributions through his own research efforts, but has also developed a research unit, located first at the University of Nancy and then at the University of Paris-Sud, that has become one of the world's leading centers for the study of plant enzymes and their regulation. In addition, he has served on numerous national and international committees and editorial boards, including Plant Physiology from 1981 to 1992.

John Jacobsen's research has contributed much to the understanding of plant hormone action. He recognized early in his career the importance of understanding gibberellin action with respect to the synthesis and secretion of one family of enzymes, the α -amylases. Consequently, he embarked on a systematic exploration of the molecular mechanisms by which gibberellin

induces the synthesis of α-amylase in barley aleurone cells. Jacobsen elucidated many of the intermediary reactions that lead to the production and secretion of α-amylase. Highlights were the demonstration that gibberellin increases the level of translatable mRNA encoding α-amylase; characterization of the α-amylase isoforms; cloning of αamylase cDNA and demonstration of the antagonistic effects of gibberellin and abscisic acid on α-amylase mRNA levels; demonstration that gibberellin acts at the transcriptional level; discovery of gibberellinand abscisic acid-responsive elements in the promoter of α-amylases; and identification of transcription factors that interact with gibberellin-responsive elements. His recent work at CSIRO Canberra has led to important practical advances in barley transformation and genetic engineering. He has been a regular major contributor at international meetings on plant growth regulators.

Bruce Stone pioneered studies on the chemistry and formation of the plant cell wall. His contributions to the knowledge of carbohydrate chemistry and biochemistry. especially in relation to the structure, biosynthesis, and depolymerization of plant cell wall polysaccharides, are seminal. Stone's early studies dealt with the chemistry of the B-glucans of cereal endosperm and later led him to become a world authority on cereal germination and malting. His group pioneered the characterization of β(1-3)glucans and mixed link $\beta(1-3)(1-4)$ -glucans of the cereal and showed their organization within the endosperm. He then characterized the enzymes involved in breaking down cell walls. He was one of the first scientists to recognize the importance of arabinogalactan proteins in cell walls and was instrumental in the discovery and characterization of these proteins. Stone is recognized internationally by numerous invitations to conferences and symposia. He has been involved extensively with scientists in both developing and developed countries. As a member of the International Union of Biochemists Education Committee, he has been particularly active in promoting science in Southeast Asia.

Stephen Hales Prize Jan A. D. Zeevaart

The Hales Prize honors the Reverend Stephen Hales for his pioneering work in plant physiology published in his 1727 book Vegetable Staticks. It is awarded biannually to an individual who has served the science of plant physiology in a noteworthy manner.

The 2000 Stephen Hales Prize of the American Society of Plant Physiologists is awarded to Dr. Jan Zeevaart for his extensive contributions to the elucidation of the mechanisms whereby plant hormones mediate effects of the environment on plant processes such as flowering, growth, and protective responses to drought.

Zeevaart's early work was focused on physiological investigations of the effects of photoperiod and vernalization on flowering and seed development. His demonstration that the floral stimulus was transmissible by grafting between long-day and short-day plants remains a major piece of evidence for the existence of a stable factor or factors that induce flowering in diverse groups of higher plants.

Zeevaart established in subsequent work that gibberellin is responsible for the growth stimulation associated with a long-day photoperiod, and followed up this lead with extensive investigations of the complex pathway of gibberellin biosynthesis and its regulation during photoperiodic induction. He and his coworkers were able to identify the steps in gibberellin biosynthesis that are stimulated by long-day photoperiod and show that they are catalyzed by a multifunctional dioxygenase enzyme. They were further able to characterize the dioxygenase gene and demonstrate that its expression is positively regulated by long-day photoperiod. Thus, the physiological link between longday photoperiod and gibberellin stimulation of growth was established at a molecular level. This finding represents a major advance in our understanding of the mechanisms of plant growth control by environmental factors.

Zeevaart has also performed pioneering research on the biosynthesis of abscisic acid, a plant hormone that mediates the responses of plants to water stress. By means of elegant experiments involving the stable oxygen-18 isotope and mass spectrometry, and studies of a series of mutants blocked in abscisic acid biosynthesis, he and his associates were able to establish conclusively that abscisic acid is formed by the oxidative cleavage of a carotene rather than the previously proposed pathway of direct assembly from three isopentenyl diphosphate molecules. Further work in collaboration with Don McCarty has identified and characterized the enzyme responsible for the cleavage reaction and its

products. The culmination of this line of investigation is the recent demonstration by Qin and Zeevaart that the expression of the gene for the cleavage enzyme is induced by water deficit and thus serves as the regulatory step for abscisic acid biosynthesis in water stress.

A noteworthy feature of Zeevaart's research has been his ability to master new techniques for use in his research. Collectively, the results of his research have provided new insights at the molecular level into the way in which environmental cues regulate plant growth and development and have established a solid foundation for further investigations into this important aspect of plant physiology.

We are pleased to recognize Dr. Jan Zeevaart's outstanding contributions to plant physiology with the 2000 Stephen Hales Prize.

Dennis Robert Hoagland Award Roger N. Beachy

This monetary award, established by the Society in 1985 with funds provided by the Monsanto Agricultural Products Company, honors Dr. Dennis R. Hoagland, recipient of the first Hales Award, for his outstanding contributions and leadership in plant mineral nutrition. The award, to be made not more frequently than triennially, is for outstanding plant physiological investigations in support of agriculture.

oger N. Beachy is awarded the 2000 Robert Hoagland Award for his pioneering research on coat proteinmediated resistance in crop plants. Beachy and his coworkers engineered plants to express transgenes that encode coat proteins from tobacco mosaic virus (TMV) that confer resistance to infection. Using this technology, he developed the world's first genetically altered food crop, a tomato resistant to infection by TMV and related viruses. The approach proved to be a prototype for other scientists who have since developed commercially important virus-resistant varieties of potato, tomato, squash, cucumber, papaya, and other crops. This discovery also served as the focal point for subsequent research by Beachy and his colleagues on the role of protein structure in capsid protein-mediated resistance, the function of the P30 movement protein of TMV in pathogenesis and the intercellular spread of viral infection, and the transcriptional regulation of gene expression. Whereas the coat protein of TMV from transgenes interferes with the disassembly of challenge viruses, and the structure of the TMV capsid protein can modulate the rate and extent to which this occurs, the coat protein from tobacco etch potyvirus interferes with the infection process in a different manner. The fundamental information generated by Beachy and his coworkers about how the capsid and P30 movement proteins influence the infection and replication processes of plant viruses implicate new strategies that can be used to confer viral resistance to agronomically important crop species.

In making these important contributions, Beachy has greatly influenced modern plant virology. He has been particularly successful in transferring modern technologies in plant biology and biotechnology to scientists in developing and Third World countries and is an effective spokesperson and leader of the plant science community in the United States. In recognition of his many accomplishments, he has won other honors and awards, including election to the National Academy of Sciences in 1997. ASPP is extremely pleased to present the 2000 Dennis Robert Hoagland Award to Dr. Roger N. Beachy.

Charles F. Kettering Award Gerald T. Babcock

The Kettering Award was established by an endowment from the Kettering Foundation in 1962 to recognize excellence in the field of photosynthesis. It is awarded biannually.

The 2000 Charles F. Kettering Award of f I the American Society of Plant Physiologists is awarded to Dr. Gerald T. Babcock for his pioneering contributions in describing the mechanism of water oxidation and oxygen evolution in the Photosystem II reaction center. Although the contributions to this area alone have been outstanding. Babcock's contributions have been made more valuable, both conceptually and pedagogically, by his similar contributions to the mechanism of oxygen reduction to water in the respiratory enzyme cytochrome oxidase. The complementary nature of these two major research areas has afforded Babcock a unique perspective in his research, writing, and lectures on metalcatalyzed water-oxygen reactions. His list of published research articles now numbers nearly 280-an astonishing average of more than 10 per year!

Beginning with his very first research publication as a Ph.D. student in 1973, Dr. Babcock's work focused on the kinetic components of electron donation in the Photosystem II reaction center that were detectable by electron paramagnetic resonance spectroscopy. This work would ultimately lead to the demonstration that Signal II was associated with a pair of conserved tyrosines in the PsbA and PsbD polypeptides of Photosystem II. Subsequent to this discovery, Dr. Babcock has produced a substantial body of evidence to suggest that one of these tyrosines may be directly involved, by H-atom abstraction, in the oxidation of water. This new description of the water-splitting chemistry has transformed the view of the entire field concerning the mechanism of the reaction catalyzed not only by Photosystem II but of other metalloradical enzymes, such as ribonucleotide reductase. The predictions of his model have been tested by a variety of experimental and theoretical approaches. As one of the people who recommended Babcock for this award noted, "This work is the stuff of the next editions of plant physiology and biochemistry textbooks."

Babcock's interest in cytochrome oxidase also dates back to the 1970s, and he has studied this key enzyme by similarly applying a wide range of spectroscopic and chemical approaches. A remarkable breakthrough was the direct observation of the oxygen adduct at the enzyme's active site by time-resolved Raman spectroscopy. This was shortly followed by his direct demonstration of an oxoferryl [Fe(IV)=O] intermediate and at a later stage of the reaction cycle by the same technique. Babcock has proposed a role for a tyrosyl radical in the mechanism of the 0-0 bond-breaking reaction that is nearly the exact reverse of the mechanism proposed for the O-O bond-forming step in Photosystem II. The recent discovery of tyrosyl radicals in cytochrome oxidase supports the proposed role of tyrosine in the reaction mechanism and illustrates the intellectual leadership that has characterized Babcock's work in these complementary fields.

A meaningful measure of his influence can also be seen from his mentoring and service contributions. He has trained more than 60 graduate students and postdoctoral fellows thus far in his career. He has served as an associate editor or co-editor for six different journals and has served on numerous grant review panels for five different agencies. He has organized a number of meetings and symposia, including Gordon Conferences in two different subject areas. From 1990 to 1998 he served as chairman of the Department of Chemistry at Michigan State University. In recognition of his outstanding research and service achievements, he was named University Distinguished Professor in 1997 and received the Michigan Academic

continued on page 10

Governing Board Award in 1999, ASPP is pleased to recognize the outstanding contributions of Dr. Gerald T. Babcock in photosynthesis and respiration by awarding him the 2000 Charles F. Kettering Award.

Charles Reid Barnes Life Membership Award Joe Kev

The Barnes Award is the oldest ASPP award. It was established in 1925 in honor of Dr. Charles Reid Barnes, the first professor of plant physiology at the University of Chicago. It is an annual award of life membership in the Society given to recognize the recipient for meritorious work in plant physiology.

The 2000 Charles Reid Barnes Life Membership Award is awarded to Joe Key, a pioneer in the application of molecular approaches to the study of plant growth and development. Through mentoring of students and postdoctoral associates, he populated the plant science community with successful and productive investigators. Finally he played a major and critical role in the development of plant biology into the strong and healthy field it is today.

In the 1960s and 1970s, Key conducted innovative studies on the relationship between RNA metabolism and protein synthesis and the action of auxins. Among other things, he and his colleagues showed that auxin induced short-term changes in the quantity and composition of mRNAs and long-term increases in ribosomal RNA. Although the technology of the day limited in-depth molecular characterization, this work was a new approach to the study of hormone action and set the stage for subsequent investigations into the role of gene expression in plant growth and development. In the 1980s, Key's group focused on the heat shock response. Key and his colleagues identified and characterized multigene families of heat shock proteins and their corresponding mRNAs, their regulated expression, and the physiology of thermotolerance in plants. With these studies, he focused attention on heat shock as a simple model system in which mechanisms of plant gene expression could be analyzed.

A measure of the success of any academic scientist is the contribution made to training young scientists. Key has mentored more than 50 students and postdoctorals in his career; virtually all have gone on to become well-respected scientists in positions ranging from academic faculty members and

researchers, to industry scientists, to chancellor of a university system. Several former students and postdocs have continued molecular and biochemical studies on hormone action and heat shock.

Key is truly a father of plant molecular biology, not only because of his seminal research studies, but also because of his tireless service to the field. He chaired early Gordon Conferences on plant molecular biology in 1980 and 1981 and served as chair of the Program Committee for the First International Plant Molecular Biology Symposium in 1985. He was president of ASPP from 1976 to 1977 and has served as vice president for research at the University of Georgia since 1986. One of his most important contributions was in the funding for plant research: He played a critical role in establishment of the USDA Competitive Grants Program and served as its first

In summary, Joe Key's career has been one of a pioneer, adopting new approaches to old problems, breaking in new technologies, and spearheading new programs in plant molecular sciences. The Society is proud to present the 2000 Charles Reid Barnes Life Membership Award to Joe Key. W

QUANTITY DISCOUNTS FOR NEW ASPP **TEXTBOOK**

Professors interested in adopting at least 20 paperbound copies of **Biochemistry & Molecular** Biology of Plants and who want to ensure that students pay the lowest price available can order directly from ASPP and receive a significant discount to pass on to their students. Contact Nancy Winchester, director of publications, at nancyw@aspp.org, for the discount schedule.



Award recipients (from left): Pierre Gadal, winner of the Corresponding Membership Award; Jan Zeevaart, winner of the Stephen Hales Prize; Sabeeha Merchant, winner of the 2000 Charles Albert Shull Award; Joe Key, winner of the Charles Reid Barnes Life Membership Award; Debby Delmer, ASPP president; Maarten Chrispeels, 1996 Stephen Hales Prize winner; and Gerald Babcock, winner of the Charles F. Kettering Award.

Executive Committee Addresses Full Agenda During Annual Meeting

The American Society of Plant Physiologists Executive Committee met on July 14 and July 18 during Plant Biology 2000 in San Diego. President Debby Delmer praised each of the committees and the headquarters staff for their dedicated efforts during the year. Highlights of the reports included the debut of *Biochemistry & Molecular Biology of Plants*, which sold nearly 700 copies during the meeting; an all-time high membership count; webcasting of the President's Symposium via the ASPP Web site; an excellent financial report and audit; and the highest level of public affairs activities ever.

Committee actions included—

- Approval for publication of a new edition of *Arabidopsis*, edited by Chris Somerville and Elliot Meyerowitz, in a Web-only version accessible free of charge.
- Continued consideration of ASPP sponsorship of a National Academy of Sciences Award acknowledging plant science.
- Funding for a commemorative 75th-anniversary publication in 2001 to celebrate *Plant Physiology*.

- The initiation of funding allocations from the reserve fund to cover the direct costs associated with services and items that heretofore were given free.
- Funding for an ASPP booth at the National Science Teachers Association meeting.
- Funding for bookmarks designed to illustrate each of the Principles of Plant Biology.
- Approval of travel grants to the annual meeting totaling \$35,000.
- Appointment of Wendy Boss to the Board of Trustees to replace Mary Helen Goldsmith, who served for three years.
- Approval of a documentary film on the role of plants and agriculture in the struggle of human beings to survive through the ages and into the future. The Education Foundation will manage this important project.
- Designation of Honolulu, Hawaii, as the site for the 2003 annual meeting. (The 2001 site is Providence, Rhode Island, and the 2002 site is Denver, Colorado.)
- Funding for a portion of the production of a second edition of Maarten Chrispeels's book, *Plants, Genes and Agriculture*, which

will include a new art program and full-color figures as well as a chapter on genetic engineering that will be fully accessible on the Web.

- Approval of the ballot wording for a membership vote to change the name of the Society to American Society of Plant Biologists.
- Approval of an electronic voting option for all future membership votes.
- Approval that nominees for Society awards be considered for an additional award cycle and that updated information be encouraged from all nominees.
- Approval of free registration to future annual meetings for emeritus members.
- · Approval of the 2001 budget.
- Approval of the development of a Web site for the International Association of Plant Physiologists.
- Approval of a new undergraduate research fellowship program.

In addition to the above, the Education Foundation met during the annual meeting and approved the hiring of a foundation director this fall.

Education Foundation Board Approves Television Documentary, Textbook Production

The ASPP Education Foundation Board of Directors met July 20 in San Diego following the ASPP annual meeting. New board members were introduced, and decisive actions were taken on new proposals.

The board approved the proposal to produce and distribute a television documentary and DVD on the history of agriculture. The film will explain the role plants and agriculture have played in the human struggle to survive through the centuries. "It is the objective of the foundation and the Society to have the public know how important modern plant research is for both understanding 'how plants work' and for developing the crops of tomorrow," stated Bob Goldberg, Education Foundation Board chair. "The major goal is to have an outstanding documentary film that can have a strong impact in the United States and elsewhere."

Kugelblitz, an independent television production company in London, will produce the film and DVD. Specializing in science documentaries, Kugelblitz has produced films for television in England that have also been shown in the United States on the Discovery Channel, The Learning Channel, WGBH, and television outlets

around the world. Its recent film "Rise & Fall of GM" is exemplary of the successful films produced by Kugelblitz. It was awarded the British Medical Association prize for best science documentary of 1999 and has been nominated for the best documentary award at BANFF, an international television festival. Goldberg and other ASPP members will work closely with Kugelblitz.

The foundation will also be assisting in the publication of the second edition of *Plants*, *Genes and Agriculture* by ASPP member Maarten Chrispeels. The first edition of the book was published in 1994 and adopted by more than 50 colleges and universities. It is intended as a text for introductory courses in agriculture, plant biology, and economic botany. It includes information on plants, genes, food, and people and describes the changing relationship among them.

The book shows how agriculture is changing throughout the world and discusses the role genes and genetic engineering are playing in these changes. The new edition will be updated to include the dramatic changes during the past decade. ASPP will provide support for a new art program and full-color text; the color art will be available for use by ASPP members on the ASPP Web site.

ASPP will have the right to distribute the last chapter, "The Global Food Fight and the Urban Myths about Genetic Engineering," as a separate publication. In addition, ASPP members will receive a 20 percent discount off the list price of the book. ASPP will receive 200 free copies for distribution to organizations and individuals in developing countries involved in the global effort to sustain an adequate world food supply.

Along with these two new projects, the foundation will continue with its support of other efforts to increase public understanding of plant research and the work of plant scientists to provide renewable resources for world survival.

The foundation board of directors continues to attract talented members. Barbara Mazur, director of genomics and bioinformatics research at Dupont Agricultural Enterprise; Susan Harlander, president of BlOrational Consultants, Inc.; Anthony Cavalieri, vice president and director of trait & technology development—output traits at Pioneer Hi-Bred International, Inc.; and Richard Flavell, chief scientific officer at Ceres, Inc., have recently joined the board.

ASPP Publishes Major Plant Biology Textbook

n July 14, at the opening reception for Plant Biology 2000 in San Diego, ASPP debuted its brand new plant biochemistry textbook, Biochemistry & Molecular Biology of Plants. After several years in development and production, this major initiative by ASPP members Bob B. Buchanan, Wilhelm Gruissem, and Russell L. Jones exceeded all expectations by selling nearly 700 copies in three days in San Diego. In 24 chapters comprising more than 1,400 pages and over 1,600 full-color original illustrations and photographs, Biochemistry & Molecular Biology of Plants is already receiving outstanding reviews from faculty teaching upper-level undergraduate and graduate students in plant biochemistry, plant physiology, and related subject areas. The book focuses not only on the biochemistry of plants, but also on relevant elements of molecular biology, cell biology, and plant physiology. The integration of these topics is achieved by organizing the book around fundamental issues of biology: compartmentation, cell reproduction, energetics, metabolism, and development.

Buchanan, Gruissem, and Jones collaborated with more than 50 academic colleagues—four-fifths of whom are Society members—in the top tier of plant biologists working around the world to create this boldly contemporary picture of plant biochemistry and molecular biology. The book is being offered in clothbound and paperbound editions and is specially priced for ASPP members and students at \$89.95 paper and \$119.95 cloth (paperback list: \$99.95, clothbound list: \$149.95). A CD-ROM featuring all the art and photographs in the book is due in October. It is free to professors placing an adoption order of five

or more copies of the paperback edition. Sold separately, it is available for \$29.95.

Bob Buchanan is a professor in the Department of Plant and Microbial Biology at the University of California at Berkeley. He has taught general biology and biochemistry to undergraduate students and graduatelevel courses in plant biochemistry and photosynthesis. He has served as department chair and was president of ASPP from 1995 to 1996. Wilhelm Gruissem chaired the Department of Plant and Microbial Biology at the University of California at Berkeley from 1993 to 1998 and has taught general biology and plant molecular biology to undergraduate and graduate students. His research focuses on pathways and molecules involved in plant growth control and regulation of chloroplast development. In July 2000, he joined the Swiss Federal Institute of Technology in Zurich as professor of plant biotechnology. Russell L. Jones was appointed to the faculty of the Department of Botany at the University of California at Berkeley in 1966. He is now a professor of plant biology at UCB and teaches undergraduate classes in general biology and graduate courses in plant physiology and cell biology. His research focuses on hormonal regulation in plants using the cereal aleurone as a model system. Jones was president of ASPP from 1993 to 1994.

Interested readers are urged to visit our new textbook Web site at aspp.org/biotext. There you will find a full table of contents down to second-level subheads, the introductions and summaries of all 24 chapters, two full sample chapters, a feedback/review page (we'd love to hear from you!), and a secure online order form. #



ASPP President Debby Delmer and Nancy Winchester, director of publications, display Biochemistry & Molecular Biology of Plants in San Diego.

CSWIPP Thanks Sponsors



The ASPP Committee on the Status of Women in Plant Physiology is most grateful to the sponsors of this year's luncheon program at Plant Biology 2000. Each year the committee sponsors a networking lunch with a featured speaker and encourages both students and senior professionals to attend. This year, more than 150 people attended the sold-out event.

Sponsorship also reached record levels this year, and the committee thanks the sponsors for their generous contributions. Sponsor contributions totaling \$2,350 were used to subsidize the cost of the luncheon for graduate students and postdoctoral associates, who attend for less than half the usual ticket price. This year's sponsors are Novartis Agricultural Discovery Institute, Inc.; Ceres, Inc.; Pioneer Hi-Bred International, Inc.; ProdiGene, Inc.; and E. I. DuPont de Nemours and Company and Paradigm Genetics.

Game, Set, Match, and Marathon for Charity

After the workday is over, a couple of ASPP staff members have been combining work for charity with their physical fitness regimens. In a recent competition that provided financial support to youth tennis programs, ASPP Executive Director John Lisack, Jr., and his son, John Paul, captured the Virginia State Father/Son Tennis Championship. In addition to the state title, in previous years, John and his son have also won the Mid-Atlantic Championships and have placed seventh in the national championship.

Melissa Junior, managing editor of *Plant Physiology*, ran 20 miles during a recent weekend day as part of her training for the Dublin (Ireland) Marathon, a 26.2-mile race that will be held October 30. Melissa will be running for Team Diabetes to benefit the American Diabetes Association, for which she has raised over \$4,000. This race will be her first marathon and many steps up in distance. She's already challenging all contestants for best time in the next Plant Runners Stampede at Plant Biology 2001. Readers are urged to run to their calendars and mark July 21–25, 2001, for the ASPP annual meeting in Providence, Rhode Island.



Briggs, Liscum Win Awards at Photobiology Congress

A SPP members Winslow Briggs and Emmanuel Liscum both won awards at the International Photobiology Congress held this past July in San Francisco. Briggs was awarded the Finsen Medal, given every four years by the Association Internationale de Photobiologie for achievements in photobiology. The award was established to honor 1903 Nobel Laureate Niels Ryberg Finsen in recognition of his contribution to the treatment of diseases, especially lupus vulgaris, with concentrated light irradiation.

Liscum won the American Society of Photobiology's Young Investigator Award, given annually for outstanding research in photobiology by a junior investigator. Coincidentally, Liscum is a former postdoc of Briggs's (1993–96).



Winslow Briggs and Emmanuel Liscum.

Society Garners High Scores in Survey of Scientific Societies

A SPP made a strong showing in a recent survey by the Council of Engineering and Scientific Society Executives (CESSE) to assess overall member satisfaction on a number of criteria. The survey was analyzed for CESSE-member organizations by size of membership (under/over 12,500) and focus of society (engineering/scientific).

Forty-five societies participated in the survey, and 335 ASPP members responded. Questions were grouped in the following categories: Products and Services, Enhancement of Profession, Benefits to Members, Overall Evaluation of Membership Experience, Overall Cost, and Value of Continued Membership. In all categories, ASPP's overall score was well above the mean. For the two categories Products and Services and Enhancement of Profession, ASPP received the highest score given for the items Quality of Publications (Technical/Scientific). Use of Electronic Communications, Publication Format, Advocacy Role with Governmental Agencies, and Building the Public Image of the Profession.

The survey was conducted this past spring by Market Probe, Inc., of Milwaukee, Wisconsin. ******

New Staff

A SPP is pleased to announce that Dr. Nancy A. Eckardt has joined the staff as news and reviews editor of THE PLANT CELL. Nan has a Ph.D. in plant physiology from Pennsylvania State University



and an M.S. in botany from the University of Minnesota. She is currently finishing a postdoctoral assignment at Penn State, where she is co-principal investigator on an NSF-funded plant genome project headed by Dr. Nina Fedoroff to investigate the regulation of plant response to stress using cDNA microarray analysis. Nan will be writing the "In This Issue" feature for THE PLANT CELL and will coordinate meeting reports, letters to the editor, and other features of the journal's front section.

Dr. Peter V. Minorsky is the new science writer for *Plant Physiology*. Peter received his A.B. in biology from Vassar College and his Ph.D. in plant physiology from Cornell University, where he



researched the effects of cold temperatures on the calcium dynamics of plant cells. Since his postdoctoral stint at the University of Wisconsin–Madison studying single channel currents in yeast vacuoles and mitochondria, Peter has held a series of visiting professorships at Kenyon College, Union College, Western Connecticut State University, and now Vassar College. He has published papers on the ecology and biophysics of samara dispersal and the possible role of geomagnetism on latitudinal variations in plant antisymmetry.

September/October 2000, Vol. 27, No. 5



Conway Offers Perspectives on Modified Foods, Accepts Leadership in Science Public Service Award

Gordon Conway, president of the Rockefeller Foundation, was presented the ASPP Leadership in Science Public Service Award July 15 in San Diego. In presenting the award, ASPP President Debby Delmer cited Conway's successful career in serving science and humanity.

In his work with the Rockefeller Foundation, Conway has been addressing the health, food, work, and creative expression needs faced daily by poor people throughout the world.

Conway has guided the foundation's efforts to help achieve food security for all people through the generation of agricultural policies, institutions, and innovations that can provide sustainable livelihoods for the rural poor in regions of developing countries. He is addressing the key constraints to food security in developing nations through coordinated work in biotechnology and agroecology and through partnerships with local scientists and farmers. A primary focus area is the use of biotechnology to develop drought-resistant seeds, control weeds, and improve human nutrition.

One of the most noted successes in the use of biotechnology to improve nutrition has been the foundation's support of research leading to golden rice. This rice has been modified to enhance levels of iron and β-carotene, the precursor of vitamin A. Huge populations of people in the developing world are dependent on rice as their primary food source. This often leads to deficiencies in vitamin, A which can result in childhood blindness. Lack of iron in the diet can cause anemia and related maladies. The enhanced properties of golden rice demonstrate the revolutionary capacity of plant biotechnology to prevent dreaded and often deadly human diseases afflicting millions of people.

In addressing ASPP members at Plant Biology 2000 after receiving the Leadership in Science Public Service Award, Conway noted the important role plant scientists play in addressing needs of the world's hungry. Conway mentioned the need for a new Doubly Green Revolution that would meet the nutritional requirements of people in the developing world. He said many tools are required to address these needs. Sophisticated approaches in plant genetics, more

effective and environmentally benign agricultural practices, improved distribution systems, and efforts to better tap the talents of poor farmers themselves are all essential.

To see and hear Conway's presentation at the annual meeting, visit the ASPP Web site at http://www.aspp.org/hot_news/index.htm. &



Gordon Conway

ASPP Supports Senate Appropriation for Agricultural Research

A SPP is supporting Senate Appropriations recommendations for agricultural research in fiscal year 2001. The Senate Appropriations Committee approved Senate Bill 2536 and Senate Report 106-288, which call for funding plant research sponsored by the National Research Initiative Competitive Grants Program (NRI) at \$41,250,000 in FY2001. This amount represents an increase over current-year funding of \$41 million.

There is a recommended deep reduction of \$14.4 million or 35 percent in NRI-sponsored plant research in the House Appropriations report (House Report 106-619). Cuts of this magnitude would severely weaken the capability of plant scientists to help farmers meet needed yields in crop production.

The Senate Committee recommends spending \$871,593,000 for the Agricultural Research Service (ARS) for FY2001, which is an increase of \$41,209,000 over current-year

funding. The House Committee recommends \$850,384,000 for the ARS, an increase of \$20 million.

The rekindled \$113 million Initiative for Future Agriculture and Food Systems would be funded in the current year in Senate provisions, but not in the House. Funding for the program had been blocked in past years over a committee jurisdictional dispute.

The two bills will be considered in a future House/Senate Conference of about a dozen senators and a dozen representatives. ASPP Campus Contacts and their colleagues in key states have been urging likely members of the future conference to accept the Senate Committee provisions. The ASPP Public Affairs Committee and staff have been working with ASPP members, congressional staff, and allied organizations on this effort.

ACTIVATE YOUR FREE ONLINE ACCESS TO THE ASPP JOURNALS!

Don't forget that ALL
Society members receive
FREE access to the electronic versions of both Plant
Physiology and THE PLANT
CELL. You do not have to
subscribe to the printed
journals to access PP and
TPC online. Activation is
easy! Go to www.plant.org to
get started!

NRC Urges Continued NRI Emphasis on Fundamental Research

A report by the National Research Council on the National Research Initiative (NRI) found the NRI to be a successful template for support of a substantial increase in public research in food, fiber, and natural resources.

The report, "National Research Initiative: A Vital Competitive Grants Program in Food, Fiber, and Natural-Resources Research," cited substantive research contributions that have originated in the NRI.

The report's first recommendation is that a major emphasis of the NRI continue to be the support of high-risk research with potential long-term payoffs. Much of the research would be classified as fundamental in the traditional use of this term. The NRI should also continue to emphasize the importance of multidisciplinary research, the report noted.

The following are many of the recommendations included in the NRC report.

- The NRI should continue to emphasize its mission of training and education.
- The process of merit-based peer review should be continued as the most effective method of competitively distributing funds for research in food, fiber, and natural resources.
- A more effective performance tracking system should be established to improve research accountability.
- An internal information system should be implemented to generate data on current operations of the NRI.
- The NRI Web site should be more readily accessible to allow the location of research projects and results with the use of issue-oriented keywords and technical terms that are accessible and understandable to all stakeholders.
- Six standing scientific-research review committees should be assembled to identify critical issues in each research area. The current 26 programs should be eliminated and replaced with an issue-based agenda across the six purviews of the review committees.
- The research review committees should give special consideration to problems important to the public at large, such as alternative energy, healthfulness of food, food safety, and nutrition (issues at the consumer end of the food system), in addition to the more traditional emphases on productivity, rural economies, and environmental protection.
- A cooperative formal-goal-and-strategy process should be instituted in the context of the NRI's role in federal food, fiber, and natural resources research programs.

- The NRI and other competitive USDA research programs should be moved to a new Extramural Competitive Research Service (ECRS) that would report to the undersecretary for research education and economics.
- An Extramural Advisory Board (12 to 14 members) should be established that represents NRI stakeholders and has a non-USDA chair.
- The position of chief scientist should be a full-time, permanent, five-year position, with the option of one five-year renewal, chosen by the secretary of agriculture with the consultation, recommendations, and advice of the newly created Extramural Advisory Board. The chief scientist would be the administrator of ECRS.
- Each of the six mandated areas of research emphasis should be led by a half-time associate chief scientist with a two-year rotation. Each associate would be a scientist from a visible and productive outside research program.
- Grant awards should be immediately increased to an average of \$100,000 per year (total costs) over three years.
- The NRI's overhead limit should be immediately replaced with indirect-cost standards that are used by other federal research agencies.
- By 2005, the NRI budget should be increased to a level equivalent (adjusted for inflation) to the \$550 million recommended by the NRC in 1989, but only if recommended changes in priority setting, documentation, and organization are put into place.

The National Research Council was organized by the National Academy of Sciences in 1916 to associate the broad community of science and technology with the academy's purposes of furthering knowledge and advising the federal government. NRC established the Committee on Evaluating the USDA National Research Initiative Competitive Grants Program. The committee has been chaired by Thomas Urban, who is retired from Pioneer Hi-Bred International, Inc.

Somerville Urges More Public Outreach by Scientists in GMO Debate

In the "Editor's Choice" column in the August issue of *Plant Physiology*, ASPP member Chris Somerville reviews the current debate on recombinant DNA technology.

Somerville notes that not all of the organizations involved in the genetically modified organism (GMO) debate are politically neutral. "Indeed, much of the rhetoric concerning GMOs has very little to do with the underlying science and a lot to do with other issues such as industrialization of agriculture and control of the food supply by [American] multinational corporations," Somerville said.

"We are entering a new era in which the social value of science and technology will be under attack by political groups that are looking for simplistic solutions to the many changes that are sweeping the planet. Because science is a powerful agent of change, scientists will increasingly be viewed with suspicion or worse," Somerville continued. "I think that to avert a downward spiral of mistrust, we must become more involved in public discourse. The GMO issue is a tremendous opportunity for plant biologists to engage the public on a topic in which they are interested. The first step is to become informed about these issues."

Somerville recommended a number of reference sources on the GMO debate including Internet-based information offered by ASPP member C. S. Prakash, Klaus Amman, and the Society. The Somerville article in *Plant Physiology* can be found on the Internet at http://www.plantphysiol.org/cgi/content/full/123/4/1201.

An Open Invitation to
Participate in Triticeae
Genomics: The "Barley 600"
Plan. Pick a gene and have it
mapped and the BAC clones
identified in barley.
www.css.orst.edu/barley/
nabgmp/Barley600.htm

NSF Highlights Five Plant Research Advances with Greatest Impact on American Lives

The National Science Foundation's (NSF's) 50th anniversary edition *Resource Guide 2000* highlights 50 discoveries or advances that the foundation believes have had the most impact or influence on every American's life. NSF calls the list its "Nifty 50" in honor of the organization's 50th anniversary.

Five plant research discoveries or advances are among the Nifty 50. These include plant genome research on Arabidopsis; plant research leading to edible vaccines; genomics biopharming with plants; research with plants to overcome heavy metals; and plant research to overcome salt toxicity. The five highlighted plant research discoveries can be found at the ASPP Web site (http:// aspp.org) in the public affairs issues/plant research briefing papers section. Some other discoveries cited in the Nifty 50 include the Internet; magnetic resonance imaging; and effects of acid rain. The following is a summary on Arabidopsis research as listed in the resource guide.

Arabidopsis: A Plant Genome Project

With NSF support, biologists today are mapping all of the genes of a model organism, namely *Arabidopsis thaliana*—identifying the sequence and location of each gene. Scientists have already made fundamental discoveries that may lead to the development of improved crops and plant-based products.

NSF began working with leaders in plant biology in the 1980s to foster a spirit of cooperation and to encourage the use of this model plant in research. In 1990, NSF led a multiagency, multinational project to identify all of the genes in *A. thaliana* (and thus to create a genetic roadmap to flowering plants) by the end of 2000.

The general belief is that *A. thaliana* is so similar to most other plants that when properties of it are found, those properties likely exist in all other flowering plants. NSF researchers expect that by analyzing the structure and function of genes in *A. thaliana*, they are laying the groundwork for studying the biology of all other plant species.

What NSF and researchers have learned so far includes the following.

- Disease resistance. Some plants are more resistant than others to viral, bacterial, or fungal diseases. Identification of specific disease-resistant genes likely will allow for increased numbers of plants that are resistant to disease.
- Environmental response. Plants change in response to light, temperature, water availability, salinity, air quality, and other environmental factors. Genes for cold tolerance have been identified.
- *Plant hormone response.* Scientists have discovered how the plant hormone ethylene affects a wide variety of plant processes,

including the ripening of fruit, wilting of flowers, and changing of the color of leaves.

• Commercial applications. Similarities in many plants allow manipulation of grains, fruits, and flowers to eventually create improved crops and novel, plant-based products, including biodegradable plastics produced in crops and improved and higher quality vegetable oil with reduced polyunsaturated fat.



Republican Majority Stops Passage of GMO Mandatory Labeling Bill

Legislation offered in the House of Representatives that calls for mandatory labeling of foods containing genetically engineered ingredients will not be enacted into law by this Congress "thanks to opposition from Republicans who say the bills are based on faulty science," according to a recent article in the *CQ Daily Monitor*.

But Dennis Kucinich (D-OH), the congressman sponsoring the bill (House Bill 3377), promises that the proposals will resurface next year, the article noted. Kucinich said that there is no proof that foods made from genetically engineered crops are safe to eat.

In July, U.S. Trade Representative Charlene Barshefsky threatened to file a complaint with the World Trade Organization over laws passed by several European countries requiring labels on genetically engineered food. Barshefsky said those laws discriminate against U.S. companies and constitute restraint of trade. Several Democrats in the House, including Kucinich, denounced Barshefsky's actions as "arrogant" and "morally wrong," the article reported.

This CQ Daily Monitor report that the mandatory labeling bill will not move to enactment this year reinforces reports ASPP heard earlier this year from House majority staff. Some supporters of the mandatory labeling bill are also seeking a ban on genetically modified foods. Passage of the labeling bill would be viewed by anti-GMO groups as a step toward the ultimate ban they seek on GMO foods. W

Cornelius van Bavel,
professor emeritus of
environmental agronomy at
Texas A & M University,
has recently published
Hugo de Vries: Travels of a
Dutch Botanist in America
1904–1912. Publication
date: 2000; 58 pages;
\$11.00 USA and Canada,
\$13.00 rest of world.
Available from Pecan Valley
Press, Rt. 1, Box 923-9,
Center Point, TX 78010 USA.

ASPP**NEWS**

Siedow, Fedoroff, Lemaux Discuss Modified Foods with Science Journalists

Committee on Public Affairs Chair James Siedow of Duke University and Nina Fedoroff of Pennsylvania State University gave presentations on recombinant DNA technology to more than 20 journalists as part of an educational program held June 10 at Woods Hole, Massachusetts.

Their program of nearly 2½ hours generated considerable interest and responses from journalists. Among those in attendance were science writers for *Science, Scientific American*, various national news magazines, and mid-size newspapers in the northeastern part of the nation.

Peggy Lemaux, who became chair of the Committee on Public Affairs on October 1, had made a presentation on modified foods to another group of editors at Woods Hole at an earlier program. Lemaux, of the University of California at Berkeley, is one of only two Agricultural Extension Service specialists in biotechnology in the nation.

Programs such as these provide a good opportunity for ASPP member scientists to explain the benefits and relative risks of genetic modification of crops to an audience that can influence public opinion.

Members can now
update their address/
e-mail/telephone via
a new form on the
ASPP Web page.
Visit our Web site at
https://www.aspp.org/
secure_forms/
form_update.htm

Goldberg Sees Phenomenal Advances in Plant Research

What advances in plant science can we expect in the 21st century? Many will agree that this is not the easiest of questions to answer. However, in response to ASPP President Debby Delmer's request for a visionary presentation on the subject, Society member Bob Goldberg peered into his crystal ball to see just what the future might hold for plant science.

At the President's Symposium at Plant Biology 2000 in San Diego in July, Goldberg, a professor at the University of California, Los Angeles, and chair of the ASPP Education Foundation Board, began his journey into the next 100 years by taking note of some guideposts from the century just past.

He noted that in the year 1900, Mendel's laws of genetics were not widely known. The tools and knowledge base of plant scientists at the time are now seen as quite primitive. Farmers weren't that productive by today's standards. Some 50 percent of all Americans had to work the farms to meet the nation's needs for food.

Despite the modest state of plant science and agriculture in 1900, the ensuing 100 years reaped increases in crop yields in the range of 300 percent, Goldberg noted. In addition, the number of people needed on farms to produce food for the rest of us dwindled remarkably from one in two Americans to one in 100.

Along the way, developments in the area of plant breeding, genetic engineering, irrigation, use of fertilizers, computers, and other advances helped transform plant science, American agriculture, and the nation itself.

For the 21st century, Goldberg predicted even more impressive gains—gains for which there is a definite need. "In the next 50 years, we will have to produce more food than has ever been produced in the collective

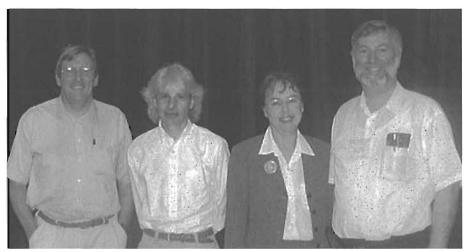
history of people on earth," he noted. "Agricultural productivity on a per capita basis is on a decline as we enter the 21st century. Today, we have hunger even in parts of the United States."

At the same time, we're near the limits of available land and other resources for agriculture. More environmentally benign agricultural practices and more productive plants will be needed. In addition to demands on cropland for food, there will be increased demands on farmers to grow energy feedstocks. Goldberg predicted that in the coming century, we will see plants supplant oil as a dominant energy source. More medicines will be derived from modified plants.

Plant genomics and genetic engineering will be important tools as we enter the new century to help meet huge energy, food, and fiber production demands. Reengineering of existing plants will be one approach taken to increase productivity and the healthful content of foods, Goldberg observed.

Many crops will be modified to fix nitrogen, leading to agricultural practices that better conserve the environment. Genomics will help in understanding hybrid vigor to produce enhanced, higher-yielding crops. Plant scientists will learn how to change the size and number of plant seeds and organs. The earliest events controlling plant reproduction will be understood. Scientists will learn "how to make a seed," Goldberg predicted.

What else will plant scientists be doing in the 21st century? To journey further down the path of prediction, visit the ASPP Web site at http://aspp.org/hot_news/index.htm to view and listen to Goldberg's presentation—a technological capability also unheard of at the turn of the 20th century.



From left to right: Roger Leigh, Bob Goldberg, Debby Delmer, and Abbas Al-Jamali at Plant Biology 2000.

ASPP Education Forum





Compiled and edited by Gary Kuleck, Biology Department, Loyola Marymount University, 7900 Loyola Blvd., Los Angeles, CA 90045, e-mail gkuleck@popmail.lmu.edu

Education Forum Welcomes Gary Kuleck, Says Good-bye to Carol Reiss

The Education Forum welcomes a new editor: Gary Kuleck, Biology Department, Loyola Marymount University, Los Angeles, CA 90045, e-mail gkuleck@lmumail.lmu.edu. Gary will replace Carol Reiss, who has served ably as editor since May 1999. Carol has stepped down as editor to assume the position of chair of the ASPP Education Committee beginning October 1. We wish her well in her role as chair and thank her for her contribution to the Education Forum.

Gary graduated from the University of Pennsylvania with a Ph.D. in genetics and, after a short postdoc with USDA, became a professor of biology at Loyola Marymount University. He is trying to combine his research and teaching goals by using C-fern in the research and teaching laboratory. He is also devoted to bringing the excitement of the discovery process to majors and nonmajors alike by participating in undergraduate research and new teaching paradigms for preservice K–8 teachers. He looks forward to continuing the tradition of fostering support for education issues within ASPP and encouraging other members to get involved.

From Gary Kuleck

As the new editor of the Ed Forum, I hope to continue in the fine tradition of Carol Reiss and previous editors while breaking

some new ground. As such, I welcome any comments and suggestions for educational issues you'd like us to highlight and beg your patience as we set off on a new path. I look forward to the continued growth and expansion of the Ed Forum in covering educational issues.

The Education booth, including Suzanne Cunningham's K-12 exhibit, was a popular attraction at the ASPP annual meeting again this year. Another great resource for information on educational issues is the Internet. The ASPP Education Web site, aspp.org/education/resources.htm, serves as a good resource for issues related to plant science education and advice on outreach at the K-12 level. Other sites of interest include the National Academy of Sciences Web site (www.nationalacademies.org/rise/), which offers valuable insights on the need for the involvement of scientists and the nature of that involvement. Other Web resources, such as the Eisenhower National Clearinghouse (www.enc.org), serve as clearinghouses for matters related to K-12 science education in general and offer advice on publishing and getting grants in the education arena. In addition, several members have requested particular compilations of sites devoted to undergraduate plant exercises, and an effort is under way to create such specialized listings. If you have suggestions or comments, send them on!

The Future of Plant Biology at Project Kaleidoscope 2000 Summer Institute

A Project Kaleidoscope Keystone conference held July 23–26 focused on the Future of Plant Biology, and in particular, plant biology education. ASPP member Paul Williams gave several talks and workshops on Fast Plants and "Doing" Plant Biology in large classes. ASPP member Les Hickok gave a workshop on the C-Fern as a model plant for teaching. Other topics on the agenda included plants in community colleges, plants in the curriculum, virtual plants, and funding opportunities. Several of the sessions were jointly sponsored and attended by biochemists from another Keystone Conference, giving plant biologists the opportunity to promote the use of plants in biochemistry laboratory teaching. Several field trips provided a look at the local flora (for those without allergies).

A session entitled "Professional Societies: Exemplars of Plant Biology Education Reform" was devoted to the importance that professional societies play in the future of plant biology education. Participants included three ASPP members, Carol Reiss, Jim Shinkle (who graciously and capably filled in at the last minute for Mark Brodl, who was unable to attend) and John Lisack, Jr., executive director of ASPP. David W. Kramer, as chair of the Botanical Society of America's Education Committee, and Ramble O. Ankumah, who described the SEEDS program of the Ecological Society of America, were also involved. Carol focused on the activities of the Education Committee. Jim discussed the interests and concerns of the PUI (Primarily Undergraduate Institution) group, and John wowed everyone by discussing the proposed film on genetically modified organisms to be produced by the ASPP Education Foundation. ASPP's efforts in the area of education and outreach were highlighted, and our Society will surely serve as a model for other societies' education efforts.

Correction

The Plant Biology 2000 story in the July/ August 2000 Education Forum should have read Dr. Alfredo Huerta and Dr. Nancy L. Smith-Huerta, Department of Botany, Miami University, Oxford, Ohio, presented an interactive exhibit featuring an overview for designing, creating, and using three-dimensional animations, Web-based models, and videos for teaching plant biology.



Exhibitor Suzanne Cunningham at her K-12 exhibit at Plant Biology 2000.



Akira Watanabe

Akira Watanabe died of cerebral infarction on May 22 in Tokyo at the age of 57. Akira engendered warmth and affection whenever one met him. He enjoyed entertaining his overseas visitors and friends in his home; indeed, being a friend of Akira meant being a friend of his family! He was a very proud Japanese, but he was enamored of other cultures as well.

Akira was professor of environmental plant physiology at the Department of Biological Sciences, University of Tokyo, since 1992. Prior to that, he spent more than two decades at Nagoya University, with a two-year sabbatical (1977–1978) in the laboratory of Carl Price at Rutgers University. He returned to the United States several times after that.

Early in his career, Akira devoted most of his time to hormonal regulation of macromolecular synthesis. In later years, his focus was on senescence-associated molecular regulation of plastid metabolism. In 1971, he showed that sulfhydryl groups regulate protein synthesis in prokaryotes, a finding that was a prelude to the now-emerging concept of redo regulation of protein synthesis in plastids. He went on to discover that cutting plant tissues invokes macromolecular synthesis.

My earliest recollection of his research is when I was a visiting scientist with the late Morris Lieberman, with whom I had just discovered that membrane function regulates ethylene biosynthesis in plants. Independent of us, Akira, with Hidemasa Imaseki, reported similar results. It was 11 years later, in September 1988, that I befriended Akira at the NATO meeting on Physiology, Biochemistry and Molecular Biology of Cell Separation in Plants in Turin, Italy. Our friendship grew over the years. Akira was a bright scientist and a very humble person. We shared many common ideas and a love of photosynthesis as well as plant hormone research.

Much before chloroplast transformation or Agrobacterium-mediated gene transfer became commonly applied to questions in plant biology, Marvin Edelman and I had wondered on several occasions about what might transpire if a plastid encountered the *psbA* gene product—the D1 reaction center protein—at the envelope membrane. The D1 protein is encoded by the plastid genome and spends all of its life within the plastid membranes. It was Akira and his team in Tokyo who were able to show in 1997 that a modified D1 protein can indeed be imported into chloroplasts where it assembles and functions like the endogenous protein.

Akira's recent work concentrated on gene expression and identification of genes induced during leaf senescence in the dark. One of the questions he was trying to answer relates to mechanisms that sense levels of small metabolites and thereby result in regulation of gene expression—one of the most challenging questions currently being grappled with by several laboratories.

Since 1995, Akira had been fighting colon tumor. He had almost won the battle when he suffered a cerebral infarction. I sent him an e-mail message while he was hospitalized; he was active, generous, and lively till the very end. A glimpse of this is evident in his reply to my message: "Now I am having chemotherapy with another drug, irinotecan (CPT11), which seems also very effective. As long as it is effective, I will be all right and able to keep myself as active as ever. E-mails are much more enjoyable when you are receiving them in hospital than in your office."

Akira was a good teacher and always involved with mentoring and inspiring young minds. He made room for his students to grow and learn; they became a part of the visit of every scientist to his laboratory. He is survived by his wife, Mutsumi, and their son and daughter. Akira will be very much missed by his family and friends the world over.

People as beautiful and pure of heart and action as Akira radiate enthusiasm, joy, and love for all humankind. Scientists as honorable and humble as Akira teach us that life is an illusion. We shared a common philosophy of life: to live and let live, to do one's duty with passion, diligence, and care, lovingly and laughingly, to be humble and grateful, to share and to respect.

Autar K. Mattoo USDA Vegetable Laboratory Beltsville, Maryland

The 2001 Dues and Subscriptional Renewal packages will be sent to all ASPP members in October. Other important information included in the packets are order forms for publications, Annual Reviews, Current Trends, and ASPP Education Foundation information.

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 Braxton Lee, ASPP NEWS, 15501 Monona Drive, Rockville, MD 20855-2768 USA. Faxed transmissions are not accepted.

FUTURE ASPP ANNUAL MEETING SITES

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

2002: Denver, Colorado Saturday, August 3, through Wednesday, August 7

2003: Honolulu, Hawaii Saturday, July 26, through Wednesday, July 30

2000

AUGUST

August 20-25 Gordon Conference on Plant Cell Walls Kimball Union Academy, Meriden New Hampshire

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

August 20-25 Gordon Research Conference on the

Cellular Basis of Adaptation to Salt and Water Stress in Plants

Tilton School, Tilton, New Hampshire Chair: E. A. Bray, vice chair: P. M. Hasegawa. For information contact Beth Bray at

bray@ucrac1.ucr.edu. Detailed information about the conference can be found at http:// www.grc.uri.edu/programs/2000/salt.htm.

SEPTEMBER

September 3-5 Plant Nutrient Transport through Biological Membranes

German Society for Plant Nutrition Giessen, Germany

For information, contact Sven Schubert, Institute of Plant Nutrition, Interdisciplinary Research

Center, Justus Liebig University, Heinrich-Buff-Ring 26-32, D-35392 Giessen, Germany; telephone +49-641-99-39-160, fax +49-641-99-39-169, e-mail sven.schubert@ernaehrung.unigiessen.de.

September 3-8

11th International Congress of Histochemistry and Cytochemistry (ICHC 2000)

York, United Kingdom

For information contact ICHC 2000 Secretariat, Royal Microscopical Society, at telephone +44-1-865-248768, fax +44-1-865-791237, e-mail info@rms.org.uk, Web site www.med.ic.ac.uk/ external/ichc_2000/.

September 6-8 Society For Experimental Biology, Plant

Transport Group Meeting

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

OCTOBER

October 3-6

Workshop: The Role of Invertases in Plant Carbohydrate Partitioning and Beyond University of Regensburg, Germany For information and registration, contact Thomas Roitsch, Lehrstuhl fuer Zellbiologie und

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

October 4-7

Signals, Sensing and Plant Primary Metabolism Potsdam University, Berlin, Germany Information including online registration is available at http://www.biologie.hu-berlin.de/ genetics/SFB_429/titel.html.

NOVEMBER

November 6-10 **SPARC 2000** 2nd SPARC General Assembly Stratospheric Processes and Their Role in Climate Mar del Plata, Republic of Argentina

Biological Effects of UV Radiation. Call for Papers. A Special Associated Workshop on the impacts of UV on terrestrial and aquatic ecosystems will be held within the SPARC-2000 (Stratospheric Processes and Their Role in Climate) Congress,

Mar del Plata, Argentina. Organizers: Walter Helbling and Virginia Villafañe (Estación de Fotobiogía Playa Unión; e-mails fotobiol@cpsarg.com or fotobiol@arnet.com.ar). Aquatic Systems. Carlos Ballaré (Universidad de Buenos Aires; e-mail ballare@ifeva.edu.ar). Terrestrial Systems (Web page: http:// www.sparc2000.at.fcen.uba.ar).

November 29-December 2 International Conference on "Tropical Agriculture Technology for Better Health and Environment" Kasetsart University, Kamphaeng Sean Campus Nakhon Pathom, Thailand

Deadline for presentation registration is July 31, 2000. Deadline for attendance registration is September 30, 2000. Please visit http:// www.rdi.ku.ac.th/announce/doc/ Health Environment/First-Announcement.htm to see first announcement.

DECEMBER

December 9-13 40th ASCB Annual Meeting Moscone Convention Center San Francisco, California

For information, contact us at telephone 301-530-7153, e-mail ascbinfo@ascb.org, Web site www.ascb.org/ascb.

JANUARY

January 7-14, 2001
Workshop on Molecular Genetics of Moss
Washington University, St. Louis, Missouri
Co-Organizers: Profs. David Cove (Leeds, UK) and
Ralph Quatrano (Washington University). Details
& application forms can be found at http://
www.biology.wustl.edu/mossworkshop.

January 28-February 17, 2001 EMBO Practical Course (pending): Plant Development: The Molecular and Cellular Basis Instituto Gulbenkian Ciencia, Oeiras, Portugal For information contact Instituto Gulbenkian de Ciencia Plant Development/2001 (a/o Maria Matoso) PT-2780-156 Oeiras, Portugal; fax +351-214407970, e-mail mmatoso@igc.gulbenkian.pt.

APRIL

April 2-6, 2001
Society for Experimental Biology Annual
Main Meeting
University of Kent at Canterbury, United
Kingdom
See http://www.sebiology.com.for.more.info

See http://www.sebiology.com for more information or contact the main SEB office at +44-20-8439-8732, or seb@sebiology.com.

April 18–20, 2001 Global Agriculture 2020: Which Way Forward? John Innes Centre, Norwich, United Kingdom Contact Agric. 2020 Conference Secretariat, John Innes Centre, Norwich Research Park, Norwich, UK, NR4 7UH; telephone +44-1-603-450581/ 450641, e-mail agric.2020@bbsrc.ac.uk, Web site http://www. http://www.jic.bbsrc.ac.uk/events/

agric2020.

May 30-June 2, 2001
Plant Photobiology
19th Annual Missouri Symposium
University of Missouri, Columbia
See http://www.biosci.missouri.edu/liscum/
uspp01.html for contacts and information.

JUNE

June 18-20, 2001 XX Congress of the Scandinavian Society for Plant Physiology Røros, Norway

Contact Knut Asbjørn Solhaug, PO Box 5014, NO-1432 Ås, Norway; telephone +47-64948482, fax +47-64948502, e-mail knut.solhaug@ibn.nlh.no, Web site http://green.uio.no/SPPS.html. June 23-27, 2001

XII International Conference on Arabidopsis Research

Madison, Wisconsin

Contact details to be provided by the North American Arabidopsis Steering Committee and posted at the TAIR Web site at http:// www.arabidopsis.org/.

JULY

July 21-25, 2001

The Quadrennial Joint Annual Meetings of the American Society of Plant Physiologists and the Canadian Society of Plant Physiologists (Societe Canadienne de Physiologie Vegetale) The Rhode Island Convention Center, Providence

For more information see http://aspp.org/annual_meeting/pb-2001/2001.htm or contact American Society of Plant Physiologists, telephone 301-251-0560, fax 301-279-2996, e-mail aspp@aspp.org.

July 25-30, 2001

The Fifth International Conference on Tetrapyrrole Photoreceptors in Photosynthetic Organisms

Brown University, Providence, Rhode Island Meeting will follow the ASPP annual meeting, which is also being held in Providence. The chair for the conference is Samuel I. Beale, and the vice chair is Alfred Holzwarth. For information see http://www.brown.edu/Departments/Molecular_Biology/ICTPPO/.

July 28-August 2, 2001

XIV International Plant Nutrition Colloquium University of Hannover, Hannover, Germany Hosted by the International Council on Plant Nutrition, President W.J. Horst. The meeting will be followed by a 2-day field trip. Information on the program and how to register can be obtained from www.ipnc2001.uni-hannover.de.

SEPTEMBER

September 2-7, 2001

9th Cell Wall Meeting, Toulouse, France Contacts: Pr Marie-Therese Esquerre-Tugaye, Pr Rafael Pont-Lezica, UMR 5546 CNRS/UPS, Pôle de Biotechnologie Végétale, BP 17 Auzeville, 31260 Castanet-Tolosan, France; telephone +33-5-62-19-35-24 or +33-5-62-19-35-16, fax +33-5-62-19-35-02/5-62-19-65-25, e-mail cwall2001@smcv.upstlse.fr, Web site http://www.smcv.ups-tlse.fr/ang/congress.htm.

Watch your mail for the November/December edition of the ASPP NEWS. It will contain the Plant Biology 2001 "Call for Abstracts"

and other important

information about

this joint meeting of

ASPP and the

Canadian Society of

Plant Physiologists.

ASPP Placement Service

This form may be used only by members of the American Society of Plant Physiologists.

Please print or type your placement information on this form (curriculum vitae will not be accepted) and send it to

Donna Gordon, ASPP Headquarters, 15501 Monona Drive, Rockville, MD 20855-2768 USA; e-mail dgordon@aspp.org.

LAST NAME			TITLE			FIRST NAME	INITIAL
STREET ADDRESS					32.4.7		
CITY			STATE	ZIP		COUNTRY	
TELEPHONE			FAX			E-MAIL	
[] Aca	rmanent ademic	[] Te [] Go	mporary overnmen	[] Pos t [] US/	A only	[] Industrial [] Outside USA	
US citizen? [Date available:			
Fields of interes	st, specialties,	and public	cations ti	tles:			
						-	
					•		
_							
				.			
Thesis, disserta	ation topics, pr	ofessor: _	<u> </u>			2222	
Professional so	cieties and ho	nors:					= = +=
Degree/year	Major	l Mi	nor		College/univ	ersity and location	
				<u> </u>			
Postdoctoral st	udy (specialty	and with v	vhom, wh	nere, when):			
Employer and le	ocation	From	То		Position	n, Title, Duties	
References (na	maa addrassa	s tolopho	no numb	ore).			
neterences (nai	mes, addresse	s, telepho	ne numb	eis).			
				10002			

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 Donna Gordon, ASPP Placement Service, 15501 Monona Drive, Rockville, MD 20855-2768 USA. Those seeking employment should complete the Placement Service Form on the previous page to be included in the service.

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

Submit all ads by e-mail to Sylvia Braxton Lee at sbraxton@aspp.org (or by mail to Sylvia Braxton Lee, 15501 Monona Drive, Rockville, MD 20855-2768 USA. If you are submitting a chargeable ad, please include billing information when you send the ad.

Academic/Government/Industry Permanent Positions (Ph.D. level):

Fee: \$150. Includes listing in one issue of *ASPP NEWS* and 12 weeks on the ASPP online Job Bank. **Word Limit:** 200 for print ad: no limit for online ad.

Postdoctoral Positions

Fee: No charge for universities, non-profit organizations, and government installations; \$150 for private companies. Includes listing in one issue of the *ASPP NEWS* and 12 weeks on the ASPP online Job Bank.

Word Limit: 200 for print ad; no limit for online ad.

• Research/Technical Positions (non-Ph.D.)

Fee: No charge for universities, non-profit organizations, and government installations; \$150 for private companies. Includes listing in one issue of the *ASPP NEWS* and 12 weeks on the ASPP online Job Bank.

Word Limit: 200 for print ad; no limit for online ad.

Assistantships, Fellowships, Internships, etc.

Fee: No charge; ad will appear in two issues of *ASPP NEWS:* the first time at full length; the second time in an abbreviated form, and 12 weeks on the ASPP online Job Bank.

Word Limit: None.

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

Institute of Botany, Academia Sinica Taipei, Taiwan (Received 07/17)

We are seeking applicants for research faculty positions at the following three levels: full research fellow, associate research fellow or assistant research fellow, which are equivalent to full professor, associate professor or assistant professor, respectively. Applicants should have at least one year of postdoctoral research experience. Candidates will conduct research on functional genomics or bioinformatics. Applications, including curriculum vitae, indication on the level of position desired, a statement of research interests and previous achievements, and the names and addresses of at least three references, should be sent to Dr. Yue-ie Hsing, Institute of Botany, Academia Sinica, 'Nankang, Taipei, Taiwan; fax +886-2-27827954, e-mail bohsing@ccvax.sinica.edu.tw. Review of applications will begin October 31, 2000.

Research Associate Rutgers University, New Brunswick, New Jersey (Received 07/19)

Research Associate position is available to lead a research group in the field of induction of biosynthesis in plant-based systems of biologically active compounds; and their identification,

isolation and purification for drug discovery project. Qualifications include strong background in natural products plant biochemistry and analytical biochemistry; Ph.D. in pharmacognosy; and demonstration of an active publication record. Please send curriculum vitae and the names of three references to Barbara Halpern, Biotech Center, Rutgers University, Foran Hall, 59 Dudley Road, New Brunswick, NJ 08901-08520. Rutgers University is an equal opportunity/ affirmative action employer.

Team Leader, Plant Physiologist Garst Seed Company, Slater, Iowa (Received 07/17)

Carst Seed Company is currently seeking an individual to design and conduct experiments in the field, greenhouse, and lab to study the physiology of crop plants in relation to genetic improvements and to evaluate and establish innovative methodologies to screen for resistance to abiotic stresses including low soil moisture, high soil pH, and high and low temperature. As part of an applied physiology team in a leading crop breeding company, the candidate will also have opportunities to collaborate with plant breeders, molecular biologists and geneticists to identify genes/QTLs and evaluate transgenic plants. Some travel is required, including extended time at the Hawaii Research Center. Qualifications: M.S. in plant physiology, biochemistry, genetics, or plant breeding.

Demonstrated experience is required in research of biochemical and physiological regulation mechanisms of plant development, growth, and productivity. Working experience of growing plants in greenhouses and growth cabinets is highly desirable. Knowledge and experience in cytogenetics and molecular genetics is an asset. The successful candidate will have strong leadership and managerial qualities, excellent communication skills, and demonstrated knowledge of spreadsheet and presentation software. This is a full-time exempt position with complete company benefits. Salary will be commensurate with knowledge, skills, abilities, and experience. Please send cover letter and resume to Human Resources-Job Opening 00-050, Garst Seed Company, 2369 330th Street, Slater, IA 50244; fax 515-685-5053, e-mail Judy.Ellis@GarstSeedCo.com. Garst is an equal opportunity employer M/F/D/V.

Assistant Professor-Floriculture Crop Production, Management and Physiology Michigan State University, East Lansing (Received 07/27)

The Horticulture Department at Michigan State University is seeking applicants for a research and extension, tenure-track position in production, management and physiology of floricultural crops. Responsibilities and expectations include coordinating research and production management programs for these crops; effectively

THE DEADLINE FOR ADS FOR THE NOVEMBER/DECEMBER ISSUE OF ASPP. NEWS IS OCTOBER 31, 2000.

Check ASPP's World Wide Web site (http://aspp.org/job_bank/index.htm) every Friday for new job listings.

Jobs with early application deadlines are listed on the Web site, but might not appear in ASPP NEWS.

collaborating with industry and MSU'S plant science community; communicating research findings to the commercial floriculture industry and other clientele; successfully competing for extramural funds; leadership in working with research faculty and extension agents; coordinating, and integrating research and extension programming related to floriculture. Qualifications: Ph.D. in horticulture or related field required, as is a record of or potential for research of the highest quality and the ability to collaborate productively with research and extension personnel. Postdoctoral experience in floriculture, ecology, ecophysiology, or stress physiology desirable. Screening will begin September 15, 2000, and will continue until a qualified applicant is identified. Position available January 1, 2001. Send a curriculum vitae, a publication list a description of research and extension interests and goals, and request that three or more letters of reference be sent to Dr. Royal Heins, Search Committee Chair, 228 Plant and Soil Sciences Building, Department of Horticulture, Michigan State University, East Lansing, MI 48824-1325.

Assistant Professor-Postharvest Physiologist/ Vegetable Crops Michigan State University, East Lansing

Michigan State University, East Lansing (Received 07/27)

The Department of Horticulture at Michigan State University is seeking applicants for a tenure-track teaching and research position. Teaching includes handling and storage of horticultural crops; participation in team-taught Vegetable Crop Production and Management, Introductory Horticulture, and the graduate level Postharvest Physiology courses; and student advising. Research includes developing a highly recognized, extramurally funded program; collaborating with postharvest physiologists, agricultural engineers, and other MSU plant scientists; effectively interacting with industry personnel. Research may be fundamental or applied addressing such problems as: shelf-life extension, development of value-added products, food safety, quality assessment, pre-harvest effects on quality and storability. Qualifications: A Ph.D. in plant science, horticulture, plant physiology, or related field and a record of research productivity in postharvest physiology or related discipline are required. Postdoctoral and/or industry experience and evidence of ability to obtain competitive external grants in support of research and/or educational programs are desirable. Application deadline: January 1, 2001, or until a suitable applicant is identified; position available July 1, 2001. Send a curriculum vitae, a publication list, and a description of research interests, and request that three or more letters of reference be sent to Dr. Randolph Beaudry, Search Committee Chair, A22 Plant and Soil Sciences Building, Department of Horticulture, Michigan State University, East Lansing, MI 48824-1325.

Assistant Professor-Vegetable Crop Production, Physiology, Ecology Michigan State University, East Lansing (Received 07/27)

The Department of Horticulture at Michigan State University is seeking candidates for a research and extension, tenure-track position to establish a systems approach to vegetable crop production, physiology, and/or ecology. Other expectations: developing a highly recognized, externally funded program; collaborating with grower groups and MSU plant scientists and extension personnel; participating in a Vegetable Crop Research Team utilizing basic and applied approaches to issues in integrated crop management, sustainable production, protected culture, new crops, shelflife extension, food safety, quality assessment, handling procedures, pre-harvest effects and practices on product quality and storability, and the physiology of quality and storage disorders. Qualifications: A Ph.D. in crop science, horticulture, plant physiology, or related field and a record of research productivity in horticulture or a related discipline are required. Postdoctoral and/ or industry experience and evidence of ability to obtain competitive external grants in support of research and/or educational programs are desirable. Application deadline is October 1, 2000, or until a suitable applicant is identified; position available January 1, 2001. Send a curriculum vitae, a publication list, and a description of research interests, and request that three or more letters of reference be sent to Dr. Kenneth Sink, Search Committee Chair, 336 Plant and Soil Sciences Building, Department of Horticulture, Michigan State University, East Lansing, MI

Assistant Professor-Maize Genetics Purdue University, West Lafayette, Indiana (Received 08/01)

A tenure-track, academic-year appointment is available. Successful applicant will pursue a creative, vigorous, and extramurally funded research program to improve the value of maize. The incumbent will conduct genetic research and germplasm development in maize as a member of an interdisciplinary research team. Candidates working on maize, other crop species, or model systems are encouraged to apply. Experimental approaches may include genetics, plant breeding, genomics, crop evolution, and biochemistry. Position offers excellent opportunities for collaborative research with scientists in a broad range of disciplines at Purdue and in industry. The faculty member will teach at the graduate and undergraduate levels. Interest or experience in participating in international programs is desired. Submit a letter of application and statement of professional goals and teaching philosophy; curriculum vitae with publication list; and names, addresses, and telephone numbers of four references to W. W. McFee, Head, Agronomy Department, 1150 Lilly Hall, Purdue University, West Lafavette, IN 47907-1150; telephone 765-494-4774, fax 765-496-2926. Application deadline extended to October 15, 2000, or until a suitable applicant is selected. Purdue University is an equal opportunity/affirmative action employer

Assistant Professor-Soybean Genetics Purdue University, West Lafayette, Indiana (Received 08/01)

A tenure-track, academic-year appointment is available. Successful applicant will conduct a vigorous, extramurally funded research program to enhance the economic value of soybeans in Indiana. Research program will focus on traits that increase the value of the soybean crop and utilize traits that either originate within the target species or in other species. The research will capitalize on genomic approaches and rely on all genetic and breeding techniques that are appropriate for a state-of-the-art-plant genetic and crop improvement program. Experimental approaches may include genomics, plant breeding, crop evolution, and the biochemistry/ molecular biology of plant and seed traits. Position offers excellent opportunities for collaborative research with scientists in a broad range of disciplines at Purdue and in industry. The faculty member will contribute to teaching in the plant genetics and breeding area. Interest or experience in participating in international programs is desired. Submit a letter of application and statement of professional goals and teaching philosophy; curriculum vitae with publication list; and names, addresses, and telephone numbers of four references to W. W. McFee, Head, Agronomy Department, 1350 Lilly Hall, Purdue University, West Lafavette, IN 47907-1150; telephone 765-494-4774, fax 765-496-2926. Application deadline extended to October 15, 2000, or until a suitable applicant is selected. Purdue University is an equal opportunity/affirmative action employer.

Research Associate Position Rutgers University, New Brunswick, New Jersey (Received 08/08)

A research associate position is available at the Biotech Center at Cook College/Rutgers University to study the mechanism of action of pokeweed antiviral protein (PAP). PAP is a ribosome inactivating protein with potent antiviral activity against plant and animal viruses. PAP accesses ribosomes by binding to ribosomal protein L3 (JBC 274, 3859-3864; 1999) and inhibits translation of viral RNAs by recognizing the cap structure and depurinating the capped RNAs (RNA, 6, 369-380; 2000). A research associate is sought to characterize the mechanism by which PAP accesses its substrates. Qualifications include a Ph.D. in a related field, experience with RNA biochemistry, molecular biology, genetics and demonstration of an active publication record. Please send a curriculum vitae and the names and addresses of three references to Dr. Nilgun Tumer, Biotech Center, Foran Hall, Cook College, Rutgers University, New Brunswick, NJ 08901-8520; email tumer@aesop.rutgers.edu, Web site http://www.rci.rutgers.edu/~tumer/, Rutgers University is an equal opportunity/ affirmative action employer.

24 ASPPNEWS

Plant Physiologist Smith College, Northampton, Massachusetts (Received 08/24)

The Smith College Department of Biological Sciences invites applications for a full-time, tenure-track assistant professor position with a start date of September 1, 2001. We seek a biologist with expertise in plant physiology to participate in an introductory course in biology/ plant sciences and to offer a one-semester lecture and laboratory course in plant physiology at the intermediate level. Teaching of an advanced course in the applicant's area of specialty will be encouraged. Candidates should have a Ph.D., commitment to undergraduate teaching, and a strong research program with projects suitable for undergraduates. Preferences will be given to persons with significant postdoctoral experience. Located in western Massachusetts, Smith College is a leader in the education of women and has a large and active Biological Sciences Department and a nationally recognized botanic garden. A typical teaching load at Smith College is one course plus laboratory per semester. The Five College Consortium comprised of Smith, Amherst, Mount Holyoke, and Hampshire Colleges and the University of Massachusetts provides a rich intellectual and cultural life for faculty and students, as well as collegial opportunities in teaching and research. A curriculum vitae, statement of teaching philosophy, and research interests, and three letters of recommendation should be sent to C. John Burk; Chair Plant Physiology Search, Department of Biological Sciences, Clark Science Center, Smith College, Northampton, MA 01063. Applications should be received by November 15, 2000. Smith College is an equal opportunity employer encouraging excellence through diversity.

Faculty Positions Institute of Botany, Academia Sinica Talpei, Taiwan (Received 08/25)

We are seeking applicants for research faculty positions at the following three levels: full research fellow, associate research fellow or assistant research fellow, which are equivalent to full professor, associate professor or assistant professor, respectively. Applicants should have at least one year of postdoctoral research experience. Candidate would conduct research on functional genomics or bioinformatics. Applications, including curriculum vitae, indication on the level of position desired, a statement of research interests and previous achievements, and the names and addresses of at least three references, should be sent to Dr. Yue-ie Hsing, Institute of Botany, Academia Sinica, Nankang, Taipei, Taiwan; fax 886-2-27827954, e-mail bohsing@ccvax.sinica.edu.tw. Review of applications will begin October 31, 2000.

Lecturer (Assistant Professor) The Chinese University of Hong Kong (Received 08/29)

The Department is seeking a plant molecular biologist to enhance its excellence in plant and

fungal biotechnology. The position, available now, is funded by a Hong Kong Government Area of Excellence grant for "Plant and Fungal Biotechnology." Applicants should have a relevant Ph.D. degree and postdoctoral experience. The appointee will teach relevant courses and conduct research in rice transformation, soybean transformation, or plant functional genomics. Appointment will be made on a two-year contract, renewable subject to funding and mutual agreement. Annual salary: HK\$554,280-703,440. Benefits include paid leave, medical care, where applicable housing benefits for eligible appointee, plus contract-end gratuity and/or retirement scheme contributions (totaling up to 15% of basic salary). Information about the university and the general terms of service are available at http:// www.cuhk.edu.hk. Please send an application letter, full resume, a publication list/abstracts of published papers, and names/fax numbers/e-mail addresses of three referees to the Personnel Office, The Chinese University of Hong Kong, Hong Kong; fax 852-2603-6852 by November 4, 2000. Inquiries may be directed to Professor Hon-ming Lam at honming@cuhk.edu.hk. Specify ref. 00/084(053)/2).

Assistant Specialist University of California, Berkeley (Received 08/30)

An assistant specialist position is available to conduct research on cereal grains and proteins, including protein isolation, characterization, nutritional and allergenic properties. Annual salary is \$34,536~39,564, depending on qualifications. A Ph.D. in biochemistry or nutrition is required. A working knowledge of biochemistry, nutrition and immunology is also required, along with technical skills in these areas. Applicants should submit resume, summary of research and arrange for three letters of reference to be sent by November 1, 2000, to Prof. Bob B. Buchanan, Department of Plant and Microbial Biology, 111 Koshland Hall, University of California, Berkeley, CA 94720. EOE/AA.

Ph.D. Scientist: Plant Fungal Biologist University of Kentucky, Lexington (Received 08/31)

Applications are invited for the position of staff scientist, plant fungal biology. The successful candidate will organize and lead the exploration of biotechnology applications to control major fungal diseases of tobacco. Practical experience in the handling and investigation of plantpathogenic fungi, and a strong interest in applications-oriented research will be essential. The position is part of a state-supported biotechnology mission, examining the development of new tobacco based crops for entirely new applications ("molecular farming"), Send a resume and brief research description to Sharon Bruce, Human Resources, University of Kentucky, 23 Scovell Hall at Lexington, KY 40506. For additional information please contact Dr. H. M. Davies at 859-257-5798 or e-mail davies@pop.uky.edu. The university is an equal opportunity employer.

POSTDOCTORAL POSITIONS

Postdoctoral Position Biotech Center, Rutgers University, New Jersey (Received 07/14)

A postdoctoral position is available immediately to use gene tagging to study plant interactions with pathogens and symbionts. The position is for one year, with an option for renewal. Applicants should have a demonstrated record of research accomplishment. Candidates should send a statement of interest, a curriculum vitae, and three letters of reference to Dr. Michael Lawton, Biotech Center, Rutgers University, 59 Dudley Road, Cook College, New Brunswick, NJ 08901-8520; telephone 732-932-8165, e-mail lawton@aesop.rutgers.edu. Rutgers is an EOE/AA employer.

Postdoctoral Position Zentrum für Molekularbiologie der Pflanzen Tübingen, Germany (Received 07/20)

A postdoctoral position is available immediately to study macromolecule (RNA) transport in the phloem of plants. Research will focus on three sucrose transporters transcribed in companion cells that were immunolocalized in enucleate sieve elements (Science 275, 1298-1300; 1997, Plant Cell 12, 1153-1164; 2000, Plant Cell 12, in press). Projects include identification of ciselements for RNA transport, mRNA-protein interactions and identification of components in polarized RNA movement. Applicants must have a strong background in molecular biology. Salary is according to the German BATIIa salary scheme (approx. \$38,000/year). Send resume and address for three references to Prof. Dr. Wolf B. Frommer, ZMBP, Auf der Morgenstelle 1, D-72076 Tübingen, Germany; telephone +49-7071-29-73087, fax +49-7071-293287, e-mail wbf@zmbp.unituebingen.de.

Positions for Ph.D. Students Zentrum fur Molekularbiologie der Pflanzen Tübingen, Germany (Received 07/20)

Ph.D. positions are available immediately to study macromolecule transport in the phloem. Research will focus on sucrose transporters transcribed in companion cells that were immunolocalized in enucleate sieve elements (Science 275, 1298-1300; 1997, Plant Cell 12, 1153-1164; 2000, Plant Cell 12, in press). Projects include identification of cis-elements for RNA transport, mRNA-protein interactions and identification of components in polarized RNA movement. Our Ph.D. program takes three years and the salary is according to German BATIIa/2 salary scheme (approx. \$19,000/ year). Applicants should have experience in molecular biology and plant biology. Send your resume and complete address for three references to Dr. Sylvie Lalonde or Prof. Dr. Wolf B. Frommer, ZMBP, Auf der Morgenstelle 1, D-72076 Tübingen, Cermany; telephone +49-7071-29-73087, fax: +49-7071-293287,e-mails wbf@zmbp.uni-tuebingen.de or sylvie.lalonde@zmbp.uni-tuebingen.de.

Postdoctoral Position Estación Experimental del Zaidín (CSIC) Granada, Spain (Received 07/21)

A 21/2 year postdoctoral position starting in October/November 2000 is offered to a European Union non-Spanish national to work in a EU project at the Estación Experimental del Zaidín, CSIC, Granada, Spain. Candidates should have extensive experience in plant molecular biology, and knowledge of plant cell biology and biochemistry is desirable. The work will involve the cloning, sequencing and expression of cDNAs of different antioxidative enzymes of plant peroxisomes. Some cDNAs will be used to overexpress antioxidative enzymes in E. coli in order to obtain high amounts of recombinant proteins. The annual salary is ECU 21,000. To apply, please send curriculum vitae, a description of your research experience, and the names and addresses (including e-mail) of three references to Prof. Luis A. del Río, Estación Experimental del Zaidín, Depto. Bioquímica, Biología Celular y Molecular de Plantas, Apartado 419, E-18080 Granada, Spain; fax +34-958-129600, e-mail LuisAlfonso.delRio@eez.csic.es.

Postdoctoral Position Institute of Paper Science and Technology Atlanta, Georgia (Received 07/25)

A postdoctoral position is available immediately for functional genomic studies of gene expression in pine vascular tissues, at Institute of Paper Science and Technology, Two-year position focuses on high-resolution analysis of xylem differentiation by microarray transcript profiling, in situ hybridization. Within a multi-institutional pine genomics program aiming to identify candidate genes that control wood and fiber properties. IPST is on GIT campus, Atlanta GA. Qualifications: Ph.D. in molecular/cellular biology, genetics or related; in situ hybridization or microarray experience desirable. Affirmative action / equal opportunity employer M/F/D/V. Applicants and employees subject to drug testing. Competitive salary/benefits. Contact John MacKay (john.mackay@ips.edu).

Postdoctoral Position Texas Tech University, Lubbock (Received 07/28)

A position is available to study carbon assimilation and partitioning in plants under elevated carbon dioxide conditions using a closed system growth chamber. Phytochemical techniques including NMR, HPLC, and GC analysis will be employed. This is an excellent opportunity for interdisciplinary research in plant physiology, horticulture, and biochemistry. Funding is currently available for one year; U.S. citizenship or permanent U.S. residency is required. If interested, send curriculum vitae and names of references to Paul W. Paré, Department of Chemistry and Biochemistry, Texas Tech University, Lubbock, TX 79409; e-mail Paul.Pare@TTU.edu.

Postdoctoral Positions University of California, Berkeley (Received 07/31)

Postdoctoral positions are available in fall 2000 to study signal transduction pathways in Arabidopsis. The goal is to understand the function of protein tyrosine phosphatases and calcium signal in plant development and stress response (Plant Cell 10, 849; 1998, PNAS 96, 4718; 1999, Plant Cell 11, 2393; 1999). Experience in molecular biology, biochemistry, and genetics/reverse genetics is highly desirable. Please send statement of research interests, curriculum vitae, and names of three references to Dr. Sheng Luan, Department of Plant and Microbial Biology, University of California, Berkeley, CA 94720; e-mail sluan@ nature.berkeley.edu.

Postdoctoral Position Kansas State University, Manhattan (Received 07/31)

A postdoctoral position is available immediately to study the molecular genetics of nonhost plant—pathogen interactions. The research will use Arabidopsis as a model system to identify genes responsible for durable resistance. Experience in molecular biology, biochemistry, and/or genetics is desirable. Please send curriculum vitae and names of three references to Jian-Min Zhou, Assistant Professor, Department of Plant Pathology, 4024 Throckmorton Plant Sciences Center, Kansas State University, Manhattan, KS 66506; telephone 785-532-2415, fax 785-532-5692, e-mail jzhou@plantpath.ksu.edu.

Postdoctoral Positions American Society for Microbiology (ASM) Washington, DC (Received 08/01)

Up to 10 positions are available to postdoctoral scientists to conduct full-time research with the overall objective of developing practical applications of microbiology, immunology, and epidemiology for the diagnosis and prevention of infectious diseases. The program is a comprehensive training program, which provides opportunities for associates to participate in interdisciplinary training on global public health issues. Associates will perform research in residence at the National Centers for Infectious Diseases (NCID), which is headquartered at the Centers for Disease Control and Prevention (CDC) in Atlanta, Georgia, or any of the other NCID laboratories in Fort Collins, Colorado, or Puerto Rico. The length of the program is two years, and associates are provided an annual stipend of \$30,800, up to \$2,000 in additional monies for professional development, and up to \$3,500 for health care benefits. For more information about the fellowship program and an application, please visit the ASM Web site at http://www.asmusa.org/ edusrc/edu23e.htm. Do not hesitate to contact Irene Hulede, Manager of Students Programs, at ihulede@asmusa.org, or call 202-942-9295. Thank you for your interest in ASM's educational programs. The deadline is November 15, 2000.

Postdoctoral Position Texas Tech University, Lubbock (Received 08/04)

A position is available to study the movement of signal molecules that trigger volatile terpene emissions in plants; both insect elicitors and endogenous plant signals will be tracked to more exactly define the mechanism of systemic signaling. Autoradiographic, HPLC, and GC analysis techniques will be employed. This is an excellent opportunity for interdisciplinary research in plant physiology and biochemistry, which may be supported for up to three years. If interested, send curriculum vitae and names of references to Paul W. Paré, Department of Chemistry and Biochemistry, Texas Tech University, Lubbock, TX 79409; e-mail Paul.Pare@TTU.edu.

Postdoctoral Position University of Michigan, Ann Arbor (Received 08/08)

A postdoctoral position is available to study the biochemistry, molecular biology, and evolution of volatile scent and flavor compounds in plants. If interested, please e-mail a statement of your research interest, a curriculum vitae, and the names of three references to Eran Pichersky, Biology Department, University of Michigan, Ann Arbor, MI 48109; e-mail lelx@umich.edu.

Postdoctoral Position Institute of Biological Chemistry Washington State University, Pullman (Received 08/09)

A postdoctoral position is available to study the mechanism of storage protein RNA sorting in rice endosperm and other plant cells. The incumbent will be studying transgenic rice plants and tobacco cells to study transport and localization of RNAs and the role of the cytoskeleton in these processes. This position, which is supported for three years, provides an excellent opportunity for interdisciplinary research in plant cell biology in combination with biochemistry and molecular biology. If interested, send curriculum vitae and names of references to Tom Okita, Institute of Biological Chemistry, Pullman, WA 99164-6340; e-mail tokita@wsu.edu.

Postdoctoral Research Associate Positions Brown University, Providence, Rhode Island (Received 08/11)

Several postdoctoral research associate positions are available in the field of plant and microbial tetrapyrrole biochemistry/molecular biology. Specific research projects include biosynthesis of hemes, chlorophylls, phytobilins, and their precursors, and the regulation of these processes. Initial appointments will be for one year, with reappointment contingent upon satisfactory performance. Positions will be filled as suitable candidates are identified. A Ph.D. and training and experience in biochemistry and/or molecular biology are required. Applications should include a curriculum vitae and the names and addresses

26 ASPP**NEWS**

of three references and should be addressed to Samuel I. Beale, Biomed Box G-J4, Brown University, Providence, RI 02912. Applications may also be made by e-mail to sib@brown.edu. More information about the ongoing research in the laboratory may be found at http://biomed.brown.edu/Faculty/B/BealeS.html. Brown University is an equal opportunity/affirmative action employer.

Postdoctoral Position Plant Gene Expression Center Albany, California (Received 08/11)

A postdoctoral position is available to develop site-specific recombination for crop transformation. Current emphasis is on the use of targeted DNA integration for functional analysis and on the use of chromosome recombination to facilitate the introgression of transgenes from laboratory to elite lines. The postdoctoral candidate should be familiar with the generation and analysis of transgenic plants. Prior experience in plant transgene expression, prokaryotic or yeast genetics is also desirable. Interested applicants should send a curriculum vitae and the names of references to David Ow, Plant Gene Expression Center, Albany, CA 94710; e-mail ow@pgec.ars.usda.gov.

Postdoctoral Research Associate University of Edinburgh, United Kingdom (Received 08/14)

A postdoctoral position is available for 2½ years to join a research program employing functional genomics approaches to investigate the molecular basis of disease resistance in Arabidopsis. The successful candidate will join a well-equipped institute possessing an excellent research environment in which plant disease resistance is a major theme. The institute received the top grade at the last United Kingdom research assessment exercise. Applicants should be highly motivated, with experience in plant molecular biology essential and expertise in genetics or plant pathology advantageous. Inquiries may be made to Gary Loake g.loake@srv0.bio.ed.ac.uk.

Postdoctoral Positions Ben-Gurion University of the Negev, Israel (Received 08/15)

As part of a study on the mechanisms associated with acclimation of algae to low temperature and the interaction of temperature and light stress. two postdoctoral positions are available at the Department for dryland biotechnology, the algal biotechnology laboratory, The Jacob Blaustein Institute for Desert Research, Ben-Gurion University of the Negev, Israel. Candidate will study the role of oxygen scavenging enzymes and metabolic activities associated with the acclimation of Spirulina platensis to low temperature. The study may also include the changes and modifications in other metabolic activities such as carbon as well as in lipid/fatty acid metabolism and composition as a result of the exposure to and growth under sub-optimal temperatures. Candidate will study the changes in PSII structure and activity in low temperature acclimated cells of Spirulina and /or Monodus subterraneus cells. The study includes the use of chlorophyll fluorescence methodology as well as other biochemical methodologies used in the study of photosynthesis. Both positions are for one year with an option of renewal up to a total of three years. Successful candidate will be provided with a scholarship to cover living expenses as well as travel expenses. Benefits include travel allowance to one international meeting per year assuming that a scientific presentation is by the candidate is made. Application should include curriculum vitae, supporting documents of current position and previous degrees and a one page project description. Indicate which position the application is made for and relevant experience in the field. Have three letters of recommendation send on your behalf directly to Prof. Avigad Vonshak, Microalgal Biotechnology laboratory, Jacob Blaustein Institute for Desert Research, Ben-Gurion University, Sede Boger Campus 84990, Israel; fax +972-7-6596802, e-mail avigad@bgumail.bgu.ac.il.

Postdoctoral Positions Michigan Technological University, Houghton (Received 08/17)

Two postdoctoral positions are now available at the Plant Biotechnology Research Center, Michigan Technological University, to work on (1) conifer tissue culture and transformation and (2) molecular and biochemical characterization of phenylpropanoid pathway genes. Candidate will work as part of a highly motivated team involved in forest biotechnology research (http:// forestry.mtu.edu/iwr/pbrc/). Experience in woody plant tissue culture for the first position, and molecular cloning, recombinant protein expression, and biochemical characterization for the second position is required as demonstrated by publication record. The Plant Biotechnology Research Center comprises several faculty members, research scientists, postdoctoral scientists, visiting scientists, and graduate students. It has six fully equipped molecular biology/biochemistry/chemistry/tissue culture labs, with state-of-the-art instrumentation and greenhouse facilities. Qualified candidates should send a curriculum vitae including a publication list and a description of research experience, along with the names of three references, to Dr. Chung-Jui Tsai, Assistant Professor, Plant Biotechnology Research Center, School of Forestry, Michigan Technological University, Houghton, MI 49931; fax 906-487-2915, e-mail chtsai@mtu.edu. Michigan Technological University is an equal opportunity/affirmative action employer.

Postdoctoral Position Washington State University, Pullman (Received 08/18)

We are seeking a postdoctoral research associate for DOE-sponsored research on the energetics and regulation of photosynthesis. The project entails applying new spectroscopic techniques for assessing the relationships among photosynthetic electron transfer, energy storage in proton motive force, and the regulation of these photosynthetic reactions. Knowledge of photosynthesis,

bioenergetics, and spectroscopy, as well as a demonstrated ability to write and publish in English is desirable. For a detailed description of the research project and the position, contact David M. Kramer, Ph.D. Institute of Biological Chemistry, Washington State University, 289 Clark Hall, Pullman, WA 99164-6340, office 509-335-4964, lab 509-335-4942, fax 509-335-7643, e-mail dkramer@wsu.edu.

Postdoctoral Research Associate. University of Nebraska, Lincoln (Received 08/22)

A 12-month, non-tenure leading position with the option to extend an additional year, based on a satisfactory performance evaluation and available funding, is available October 1, 2000. The candidate is expected to perform independently in conducting research on gene expression in transgenic soybeans. Research will be conducted primarily in the Plant Transformation Core Research Facility located in the Beadle Center in Lincoln, Nebraska, under the supervision of Dr. Thomas Clemente, Plant Transformation Specialist. A Ph.D. in the plant sciences or related discipline is required. A proven track record in molecular biology is required. Knowledge of nematode or fungal host/parasite interactions preferred. Salary range is \$26,000 to \$29,000, depending on experience. Submit a letter of application, resume, and transcripts by September 15, 2000. Also arrange to have two letters of reference sent by that date. Send application materials to Dr. Kenneth G. Cassman, Department of Agronomy and Horticulture, University of Nebraska-Lincoln, PO Box 830915, Lincoln, NE 68583-0915; telephone 402-472-1555, fax 402-472-7904.

Postdoctoral Research Position Michigan State University, East Lansing (Received 08/23)

A postdoctoral research position is available immediately to study the molecular and biochemical basis of signal transduction pathways that regulate plant defense responses. The successful candidate will join ongoing projects to study mutations that affect systemic defense responses in tomato, with emphasis on identifying components of the signaling pathway. Highly motivated candidates with demonstrated experience in plant molecular genetics and/or analytical biochemistry (HPLC and GC-MS) are encouraged to apply. Compensation will be competitive, depending on experience, and will include a comprehensive benefits package. If interested, please send a letter of application outlining research experience and interests, a curriculum vitae, and the names and addresses of three references to Gregg A. Howe, MSU-DOE Plant Research Laboratory, Michigan State University, East Lansing, MI 48824; e-mail howeg@msu.edu. MSU is an equal opportunity employer.

Postdoctoral Position Umea University, Umea, Sweden (Received 08/29)

A postdoctoral position is available immediately to

join a research program employing functional genomics approaches to investigate the molecular basis of plant (tree) interactions with pathogens. The position is for one year, with an option for renewal for a second year. The main task for the position is to establish an Aspen-Pathogenic fungi model system. The successful candidate will join a well-equipped institute with a strong international reputation. The Department of Plant Physiology is part of the newly formed Umea Plant Science Centre (UPSC), which is one of the largest constellations for experimental plant biology in Sweden. Applicants should be highly motivated and have a Ph.D. in plant pathology or clear evidence of relevant postdoctoral experience. Expertise in plant molecular biology or genetics would be an advantage. Candidates should send a statement of interest, a curriculum vitae, and three letters of reference to Dr. Jan Karlsson, Department of Plant Physiology, UPSC, Umea University, SE-90187 Umea, Sweden; e-mail jan.karlsson@plantphys.umu.se, Web site http:// www.umu.se.

Postdoctoral Position, Waksman Institute, Rutgers University Piscataway, New Jersey (Received 08/29)

A postdoctoral position is available to study genomic organization in maize. Research will focus on the use of the transposon Ac as a search engine to identify and isolate genes in the genome and as an insertional mutagen to define their function. Transgenic maize plants are used to position Ac at multiple launching pads throughout the genome. Project funded by the NSF Plant Genome Program. Experience in molecular biology essential; prior experience with plant transformation highly desirable. Please send curriculum vitae and the names and addresses of three references to:Dr. Hugo K. Dooner, Waksman Institute, Rutgers University, Piscataway, NJ 08855; fax 732-445-5735, e-mail dooner@ waksman.rutgers.edu.

Postdoctoral Position University of California, Riverside (Received 08/29)

A two-year postdoctoral position in plant biochemistry is available December 1, 2000, to study the enzymology of seven-carbon sugar metabolism in avocado. The successful candidate will have protein purification experience and skills relating to the biochemical analysis of enzymes. Additional analytical skills in carbohydrate biochemistry are also desirable. This project is a collaborative project between the laboratories of Dr. Monica A. Madore and Dr. MaryLu Arpaia. Please send your curriculum vitae (preferably by e-mail) and the names, phone numbers, and email addresses of three references to Dr. Monica A. Madore, Department of Botany and Plant Sciences, University of California, Riverside, CA 92521; fax 909-787-3870, email madore@ mail.ucr.edu. The University of California is an equal opportunity/affirmative action employer.

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

Laboratory Research Technician: Plant Molecular Biology The University of Guelph, Ontario, Canada (Received 08/18)

A research technician position is available in the laboratory of Professor J. Christopher Hall for an individual with a B.Sc. or an M.Sc. with two or four years of postgraduate research experience in molecular biology, respectively. Research experience in immunology and/or biochemistry will be an added asset. This position is available for at least two years and involves the expression of recombinant antibodies for diverse applications in plant as well as bacterial systems. The successful candidate is expected to work independently within the framework of a large research group consisting of 20 scientists. Strong interpersonal skills as well as a desire to educate and train students are an essential prerequisite for this position. Interested applicants should send a detailed curriculum vitae including an e-mail address and a list of three references to Ms. K. Sagan, Department of Environmental Biology, The University of Guelph, Guelph, Ontario N1G 2W1, Canada, fax 519-837-0442, e-mail Ksagan@evbhort.uoguelph.ca.

Associate Specialist Position University of California, Albany (Received 08/24)

An associate specialist position is available to perform full time independent molecular research on crystallizing N gene products with the goal of obtaining a three-dimensional structure of N gene products by x-ray crystallography to determine protein function and mechanism. Candidate will later perform molecular cloning of diseaseresistance genes from potato wild species. Candidate is responsible for laboratory management, which includes supervising technicians and training undergraduates and rotation graduate students; enforcing the group's adherence to laboratory policies (i.e., radiation, hazardous, and biohazardous safety rules) and good laboratory practice; organizing intergroup activities; and addressing and resolving personnel problems. Requirements: A B.A./B.S. degree in biology or related area and at least five years of relevant experience in molecular genetics, substantial knowledge and experience in basic molecular biology, protein expression, and protein cystallization; demonstrated ability to perform research independently, carry research to completion, and communicate results effectively; experience with common database software using Mac computers; experience in laboratory management and supervision. Send curriculum vitae and names/addresses of three references by November 15, 2000, to Dr. Barbara Baker, Plant Gene Expression Center, 800 Buchanan St., Albany, CA 94710; fax 510-559-5678. The University of California is an equal opportunity/ affirmative action employer.

Research Associate Ceres Inc., Malibu, California (Received 08/30)

Ceres, Inc. is a Malibu-based genomics company applying high-throughput technologies to the discovery of novel genes that will improve traits in commercially important crops. We are seeking highly creative and motivated individuals to conduct tissue culture and transformation at our state of the art research facility overlooking the Pacific Coast. The successful candidates must have an M.S. or B.S. degree with experience in plant transformation and analysis of transgenic plants. Experience in molecular cloning is desirable. Responsibilities include generation and molecular analysis of transgenic plants and help build recombinant gene constructs for plant transformation. We offer excellent salary & benefits package, stock options & 401K. Ceres, Inc. is an equal employment opportunity. To apply please fax a cover letter and resume to 310-317-8997 or e-mail to CERES-HR@ceres-inc.com or mail to CERES, Inc., 3007 Malibu Canyon Road, Malibu, CA 90265.

ASSISTANTSHIPS, FELLOWSHIPS, INTERNSHIPS, ETC.

Ph.D. Assistantship University of Göttingen/Institute of Forest Botany Gottingen, Germany (Received 07/28)

A half-time Ph.D. assistantship is available in the group of molecular ecophysiology at the Institute of Forest Botany (University of Goettingen, Germany). The successful applicant will undertake a research project examining the differentiation of vessels in the xylem of poplar. The research will focus on the isolation and characterization of genes that are specifically expressed in tracheary elements. Preference will be given to applicants with experience in molecular biology. Interested students should contact Professor A. Polle by e-mail (forstbot@uni-goettingen.de) for further information. The position is funded by the DFG (German Science foundation) and is initially available for two years. Please send a letter of interest including curriculum vitae, photocopies of documents, and names of three references to Prof. A. Polle, Institute of Forest Botany, Büsgenweg 2, 37077 Göttingen, Germany.

Graduate Assistantships University of Florida, Gainesville (Received 08/15)

Research/teaching assistantships are available for studies leading to an M.S. or a Ph.D. degree. Program areas include plant production and nutrition, plant physiology, postharvest physiology and technology, biochemistry, molecular biology, seed physiology, and plant breeding and genetics. Stipends range from \$14,000 to \$15,000 plus a partial tuition waiver. A limited number of prestigious Graduate Alumni Fellowships and

ASPP **NEWS**

Presidential Fellowships are available for highly competitive applicants. The diverse climatic conditions and cultural practices in Florida offer research opportunities with temperate, subtropical, and tropical commodities. U.S. applicants are encouraged to apply. For further information contact Dr. D. J. Huber, Graduate Coordinator, Horticultural Sciences Department, PO Box 110690, University of Florida, Gainesville, FL 32611-0690; telephone 352-392-1928, ext. 216, e-mail rgoetz@ufl.edu.

Graduate Research Assistantship Rutgers University, New Brunswick, New Jersey (Received 08/28)

Two graduate (Ph.D) research assistantships are available in the Plant Science Department in spring 2001, to work on research in turfgrass stress physiology, with emphasis on drought and heat tolerance mechanisms including carbon metabolisms and water relations. An M.S. degree is in plant physiology, crop physiology, or horticulture. Please e-mail your resume to Dr. Bingru Huang at bhuang@oznet.ksu.edu or call 785-532-1429 for further information.

Ph.D. Research Assistantship Colorado State University, Fort Collins (Received 08/31)

A Ph.D. research assistantship is available in the Horticulture and Landscape Architecture Department at Colorado State University. The program areas include the study of the role of Ribosome-Inactivating Proteins (RIPs) in plants (see Plant Physiology 119, 1447-1456; 1999), and the characterization of novel plant metabolites with medicinal/value added activities (see Trends Plant Science 4, 220-226; 1999). The projects involve chromatographic separations, library construction/screening, in vitro activity assays and interaction with cancer research centers for metabolite applications. Applicants with a M.S. degree in a plant-related area, experience in protein/metabolite chromatography and molecular biology are desirable. However, highly successful and motivated B.S. applicants will also

be considered. Selection will be based on academic achievements and research experience. Applicants should send GRE scores, transcripts, three letters of reference and a personal letter describing professional goals to the address below. For further information contact Dr. Jorge M. Vivanco, Department of Horticulture and Landscape Architecture, Colorado State University, Fort Collins, CO 80523-1173; telephone 970-491-7170, e-mail jvivanco@lamar.colostate.edu.

Ph.D. Assistantship Texas A&M University, College Station (Repeat)

Contact: Dr. James L. Heilman, Professor of Environmental Physics, Department of Soil and Crop Sciences, 2474 TAMUS, College Station, TX, 77843-2474; telephone 979-845-7169, fax 979-845-0456, e-mail j-heilman@tamu.edu. (Details July/August 2000, ASPP NEWS)

Graduate Assistantship University of Manitoba, Winnipeg, Canada (Repeat)

Contact: Dr. Sylvie Renault, Department of Botany, University of Manitoba, Winnipeg R3T 2N2, Manitoba, Canada; telephone 204-474-6914, fax 204-474-7604, e-mail renaults@cc. umanitoba.ca. For information on the Department of Botany, please consult our Web site at http://www.umanitoba.ca/faculties/science/botany/. (Details July/August 2000, ASPP NEWS)

Graduate Research Assistantship University of Florida, Gainesville (Repeat)

Contact Dr. Lena Ma at 352-392-9063 or lqma@ufl.edu or visit her Web site at http://www.ifas.ufl.edu/~qma/lqma.html for more information about her research program. Please contact Laura Studstill at 352-392-1804, ext. 342 or Lauraann@gnv.ifas.ufl.edu for more information about application procedure at the University of Florida. (Details July/August 2000, ASPP NEWS)

Ph.D. Training in Plant Biology and Biotechnology

Delaware Biotechnology Institute/ DuPont Corporation Joint Initiative, Newark (Repeat)

For information, see http://www.udel.edu/plants/index.html. (Details July/August 2000, ASPP NEWS)

Graduate Assistantships University of Memphis, Memphis, Tennessee (Repeat)

Information can be found at http://www.people.memphis.edu/~biology. If interested, contact Dr. Bill Gutzke at wgutzke@memphis.edu and providing a statement of research interests, GPA, GRE, and advanced subject test scores (if available). Applicants interested in plant ecophysiology and/or wetland ecology may contact Dr. S. R. Pezeshki (SRPEZSHK@memphis.edu). (Details July/August 2000, ASPP NEWS)

Graduate Assistantship University of Florida, Gainesville (Repeat)

Contact: Dr. Bala Rathinasabapathi, Assistant Professor, Horticultural Sciences Department, University of Florida, Gainesville, FL 32611-0690; telephone 352-392-3991, fax 352-392-5653, Web site http://gnv.ifas.ufl.edu/~brath/saba.htm. (Details July/August 2000, ASPP NEWS)

THERE'S STILL TIME TO CONSIDER A FULBRIGHT

The Fulbright Scholar Program for faculty and professionals had more than 45 awards available in the Biological Sciences for lecturing and/or doing research abroad during the 2001–02 academic year. Although the August 1 deadline is past, there are still some awards open, and recruitment will continue. For information, visit our Web site at www.cies.org after August 15 or contact the program officer listed for awards you are interested in. The award listings and application materials are downloadable or you can request printed versions from apprequest@cies.iie.org. U.S. citizenship is required. Non-U.S. citizens should contact the Fulbright agency or U.S. embassy in their home countries.

The Fulbright Scholar Program is sponsored by the U.S. Department of State, Bureau of Educational and Cultural Affairs, and administered by the Council for International Exchange of Scholars (CIES). Council for International Exchange of Scholars, 3007 Tilden Street, NW, Suite 5L, Washington, DC 20008-3009. Tel.: 202-686-7877; Fax: 202-362-3442; www.cies.org.



Impeccably organized, visually stunning... and a great teaching text and reference

Biochemistry & Molecular Biology of Plants

Buchanan • Gruissem • Jones

The combination of superb authors for each chapter, and very complete coverage of the topics of plant biochemistry and molecular biology, make this a volume that should be used in a wide range of courses and on the bookshelf of every serious plant biologist.

-Charles Arntzen

President and CEO, Boyce Thompson Institute for Plant Research, Inc.

In 24 structured chapters (over 1,400 pages and more than 1,100 original drawings plus 500 photographs), *Biochemistry & Molecular Biology of Plants* provides a boldly contemporary review of its subject, including molecular biology, cell biology, and plant physiology, integrated around the themes of compartmentation, cell reproduction, energetics, metabolism, and development. The CD-ROM of the illustrations increases its utility for teaching.

Published by the American Society of Plant Physiologists, this major text is the result of years of planning and meticulous development and editing from the top tier of plant biologists working around the world. It is an essential addition to your library and to the available resources for teaching a complex and dynamic subject.

Ordering Information

Order on the Web at aspp.org/biotext

- by phone at (800) 447-3143 or (301) 374-9730
- by fax at (301) 843-0159
- by mail with check or purchase order to: ASPP, P.O. Box 753, Waldorf, MD 20604-0753

Hardbound: BIOTXT-01

(ISBN: 0-943088-37-2, \$119.95 ASPP members;

\$149.95 libraries and nonmembers)

Softbound: BIOTXT-02

(ISBN: 0-943088-39-9, \$89.95 ASPP members and students;

\$99.95 nonmembers)

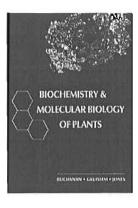
CD-ROM: BIOTXT-CD

(ISBN: 0-943088-40-2, \$29.95; free with course adoption of at

least five copies)

Biochemistry & Molecular Biology of Plants—

a major publishing event for and from the community of plant biologists



Membership Application & Subscription Form

y requesting the special membership price and signing this form, you agree to the following: In consideration of the low member subscription rates, I agree to retain my personal copies of *Plant Physiology* and THE PLANT CELL for at least three years from the date of issue, not depositing them in any library or institution before the end of this time.

In consideration of the added benefit of electronic access to *Plant Physiology* and THE PLANT CELL, which is included with the price of membership, I agree not to release my personal access code, assigned by ASPP, to any other party for the duration of my membership in ASPP.

Application Date:					_				
Institutional Address—for Directory	2000 Membersh	up Due	s (Pro-ra	ted)					
Institutional Address—for Directory	Join Date	Jan-Mar	Apr–Jun	Jul-Sep	Oct-Dec				
	Member	\$95	\$71	\$47	\$24				
Name	Postdoctoral	0.55	Φ.4.1	#0 <i>7</i>	014				
Title/Position	Associate	\$55	\$41	\$27	\$14				
THOTOSHOR	Student Member	\$35	\$26	\$17	\$9				
Institution	2000 Subscripti	on Fee:	(Circle	your sele	ection)				
Department	_			Stuc					
Department					doctoral				
Address	Publication		Member	Mer					
	Plant Physiology		\$155		125				
	THE PLANT CELL		\$130	•	100				
Telephone #	Combined Subscription	on	\$255	\$2	205				
telephone #	Sectional Societ	v Dues	(Optiona	ıD					
E-mail address (Internet accessible only)			V - I	Stude	nt/				
Web address		Re	egular	Postdoc	toral				
Web address	Midwest		\$3	\$1					
Professor's signature (If student member, please provide professor's affirmation)	Northeast		\$3	\$1					
Charles of an developed to be a second of the developed to the developed t	Southern Washington, D	C	\$5 \$5	\$5 \$3					
☐ Check here if you do not wish to have your name included in the ASPP online membership directory.	Washington, D Western	C	\$5 \$5	\$3					
the AST Folithe membership directory.									
Mailing Address—Important!			hip Dues						
(Mailing of journals requires a specific street or post office box address.)	Sectional Society Dues \$								
(If different from above institutional address)	Subscription Fee(s) \$								
	MD Residents Add 5% Sales Tax								
Name	on Total Subscription Fee \$								
		Canada Residents Add 7% GST Tax							
Address	on Total Subscription Fee \$								
 	Total Amount Due \$								
City/State/Zip/Country	☐ Enclosed is a check and made payable t☐ Personal check	o ASPP	currency, dr		U.S. bank,				
This form may be mailed or faxed, but not both! Phone inquiries: 301-251-0560	☐ I authorize ASPP to Due to my: ☐ Visa ☐ M	charge th		tal Amour erican Exp					
Mail this form to remittance address:				P					
American Society of Plant Physiologists PO Box 64209, Baltimore, MD 21264-4209 USA or fax this form to 301-279-2996	Credit Card Number Signature (Required for all of	harge orders)	E	xp. Date				
NIE	, , , , , , , , , , , ,	<u> </u>	•						

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	John Lisack, Jr. / ext. 115 jisock@aspp.org	Susan Chambers / ext. 111 chambers@aspp.org	Sondra Giancoli / ext. 140 giancoli@aspp.org	Kelley Noone / ext. 142 knoone@aspp.org	Stephanie Liu-Kuan / ext. 143 sliv@aspp.org	Brian Hyps / ext.114 bhyps@aspp.org	Nancy Winchester / ext. 117 nancyw@aspp.org	Beth Staehle / ext. 121 beths@aspp.org	Melissa Junior / ext. 118 mjunior@aspp.org	Lauren Ransome / ext. 130 Iransome@aspp.org	Annette Kessler / ext. 120 akessler@aspp.org
▼ Missing journal issues, books	The success			V		e Pleni			ASSELLED.	18010131	2015121902
▼ Subscriptions, individual	i bizalika			₩'		EXTENSION OF THE PARTY OF THE P	delen-				
▼ Subscriptions, institutional				₩	NEW H	CHAI	O COLUMN		54.5% EM		
▼ Plant Physiology (except missing issues)	THE REAL PROPERTY.	新沙沙 島	AND A		KILLINE .				•		
▼ THE PLANT CELL		and de	EVEN		CONTRACT.	Burgara	CONTRACTOR OF THE PARTY OF THE	SALESZA.	ALSO AND	10.00	HENRY
Disposition of a manuscript	and the same of th										
All other questions (except missing issues)								$\mathbf{\nabla}$			
▼ Newsletter							V				
▼ Advertising		and a recent	and the same of the same of				ADMINISTRATION TO SERVICE AND	and the second second			Afternation of the
Plant Physiology											
THE PLANT CELL	reservation access	DESCRIPTION AND ADDRESS OF THE PARTY OF THE	A STATE OF THE PARTY OF	STORY INVOICE	Arra Palara dan	CONTRACTOR AND ASSESSMENT	Discourage of the	on to warming on	or envisormen	-aurtinos	energy of the
Newsletter		20120000		16.311		AMSTERNOS.				Sire of the Salar	Mileson Inc.
▼ Address changes			AND PERSONS AND PROPERTY OF THE PERSON NAMED IN COLUMN TO SHAPE AND PARTY OF THE PERSO	₩		Alberta Dres					
▼ Membership applications			NOT WELL	W	STORES OF	242200					
Membership problems		CONTRACTOR S		V	AND A SALES LAND						4
Accounts payable Accounts receivable	DESTREASED AND THE							ena camera an	63 7 10 2 14 2 14 14 14 14 14 14 14 14 14 14 14 14 14		
Accounts payable/receivable problems	1.3000	11.5		and the same of the							
Accounts payable/receivable problems Annual meeting	Sales.		9 - E			100					
Public affairs/government relations				75.77							THE PART OF THE
▼ Education	1046,01	#031G24				- ▼					
▼ Society governance		Members.	nto substantia	ASSESSED FOR		PARTALOGISTS		THE STATE OF THE			National Co.
			grounding to place Should grow ma	PROGRAMATION TORSONERATION	representation					THE WAY S	rodoveni.
ASPP Education Foundation	V				Section Colors	MANAGER STATE				SALEMONS	SENDONEANT
International issues										11/2/12/19/19	HE SETTING
▼ Awteds	V		200		ANGSTRAT	TELEVISION A		S. Stanford Ho.	Auto China	Contract of the	SHARMATA

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

PERIODICALS

