

ASPB News



THE NEWSLETTER OF THE AMERICAN SOCIETY OF PLANT BIOLOGISTS

Volume 29, Number 5
September/October 2002

Dan Bush Assumes ASPB Presidency October 1

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Daniel R. Bush will become president of the American Society of Plant Biologists October 1. At that time Vicki Chandler will become immediate past president, and Mary Lou Guerinot president-elect.

Bush is a plant biologist in the Photosynthesis Research Unit of the USDA-ARS, professor in the Department of Plant Biology, and chair of the Program in Physiological and Molecular Plant Biology at the University of Illinois at Urbana-Champaign. He earned a B.A. degree in biology at Humboldt State University, Arcata, California, and a Ph.D. in molecular plant biology from the University of California at Berkeley. He was a postdoctoral research associate at the University of Maryland from 1984 to 1985 and at Los Alamos National Laboratory from 1985 to 1987. He has been with the ARS since 1988, during which time he also moved through the professorial ranks in the Department of Plant Biology at the University of Illinois. He was a visiting scientist with the plant genetics group at Cold Spring Harbor Laboratory, New York, from 1996 to 1997.

The aim of Bush's research program is to understand the mechanisms and control of assimilate partitioning. Initial work focused on characterizing sucrose and amino acid transporters that are essential participants in this complex process. Early success using purified membrane vesicles and imposed proton electrochemical potential differences to define the transport properties and bioenergetics of these transporters led to the first cloning of several new classes of sugar and amino acid symporters, and then to a detailed analysis of critical structure and function relationships in the su-



crose symporter and a key amino acid transporter. To achieve these accomplishments, Bush employed a variety of experimental approaches, including mutagenesis, heterologous expression in yeast and oocytes, transgenic plants, chimeric gene constructs, and domain-specific antibodies. The current research focus in the Bush lab is on understanding the regulatory pathways that control

resource allocation. They recently discovered a sucrose-sensing signal transduction pathway that appears to control assimilate partitioning (and ultimately, photosynthesis) at the level of phloem loading. The Bush lab is also part of an NSF-funded 2010 project whose aim is identifying nitrogen-sensing regulatory networks that control the expression of genes encoding key enzymes associated with nitrogen metabolism and transport. A significant effort in the lab now concentrates on dissecting the molecular details of these emerging stories.

At the University of Illinois, Bush has taught introductory biology, plant molecular biology, and photosynthesis. He was a lecturer for the 1992 and 1994 NSF-, DOE-, and USDA-sponsored plant biochemistry courses and for the Arabidopsis Molecular Genetics course at Cold Spring Harbor in 1996. Also in 1996, he was an invited lecturer for the Department of Biochemistry, National University of Mexico, Mexico City. He has been a member of the editorial board of *Plant Physiology* and is currently serving on the editorial board of *Planta*. He served as a panel member for Photosynthesis/Respiration, USDA-NRI, and Integrative Plant Biology, NSF, and as panel manager for Biotechnology, IFAFS, and for the NRI Plant Biochemistry panel. He organized an



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ASPB Officers & Staff

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Deadline for January/February 2003
ASPB News: December 10, 2002

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ASPB News is distributed to all ASPB members and is published six times annually, in odd-numbered months. It is edited and prepared by ASPB staff from material provided by ASPB 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**.


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international symposium on Photosynthesis Research at the Frontiers of Biology, Beckman Research Center, UIUC. He was a member of the Graduate Program Review Team for Crop Sciences at UIUC and is a member of the Council of Scientific Advisors for the Children's Nutrition Research Center at Baylor College of Medicine. He has received multiple USDA Merit Awards and was the 1992 Midwest Area Early Career Research Scientist of the Year. Bush was elected secretary-treasurer, vice chair, and chair of the Midwest Section of the American Society of Plant Physiologists (1993–1995) and elected as Midwest Section representative to the Executive Committee (1995–1998). He was chair of the Program Committee and secretary for the Society from 1998 to 2001. 

New Editor: *The Plant Cell*

The Plant Cell is pleased to announce that Richard A. Jorgensen, University of Arizona, has been appointed as the journal's next editor-in-chief. Rich will take the reins from current editor Ralph Quatrano in mid-2003. The *ASPB News* will feature an article on Rich and his vision for the journal in the November/December issue. 

NOTICE

Starting in January 2003, *Plant Physiology* and *The Plant Cell* will no longer collect a handling fee for papers published in the journals. Rather, the journals will assess corresponding authors a per-page charge of \$55. Corresponding authors who are ASPB members will receive a \$10/page discount. 

President's Letter

Reflections on the Year

Our recent annual meeting, "Heightened Frontiers in Plant Biology," held August 3–7 in Denver, Colorado, lived up to its name. Denver was an excellent venue, and the meeting highlighted terrific science and provided numerous mechanisms for networking. The Program Committee (Roger Hangarter, chair, Steve Long, Rich Jorgensen, Rick Amasino, Patty Springer, Bill Lucas) deserves a hearty round of thanks for organizing one of the best annual meetings that I have attended. One highlight was the opportunity to hear Dr. Norman Borlaug, father of the Green Revolution and Nobel laureate, present his perspectives on feeding the world in the 21st century. His message to students was truly inspirational. Another inspirational aspect of the annual meeting was seeing all the positive outcomes resulting from the creativity, energy, and hard work of so many of our members. We had a record-setting number of workshops, luncheons, and breakfast events, which provided opportunities to network, learn, and share experiences. I want to express my sincere appreciation to all our members and staff who worked so hard to put on these successful events, which are described in more detail within this newsletter.

On October 1, Dan Bush will become president, I will become immediate past president, and Mary Lou Guerinot will become president-elect. Nick Carpita will join the Executive Committee as an elected member.

In this letter I will discuss several key events that occurred this year and summarize the major action items coming from our two Executive Committee meetings held in Denver.

There are a number of news items dealing with our two journals, *The Plant Cell* and *Plant Physiology*. *Plant Physiology*

garnered its highest impact factor to date, and *The Plant Cell* remained the plant journal with the highest impact factor. Last year the Executive Committee authorized \$60,000 for the digitization of all back issues of *The Plant Cell* and for issues of *Plant Physiology* back through 1993. I'm happy to report that this initiative is now complete. With more and more of us accessing journal articles through our computers, this benefit has proven to be very popular. Both journals are now using electronic submission and review, which is speeding up the process and reducing costs. Beginning in July 2003, *The Plant Cell* will have a new editor-in-chief, Dr. Richard Jorgensen, from the University of Arizona. Beginning January 2003, both of our journals will change from manuscript handling fees to page charges. Importantly, as a benefit to our membership, there will be a \$10/page discount for corresponding authors who are members of our Society.

The most contentious issue facing our Society this year was the proposed name change for our journal *Plant Physiology*. Last fall, Natasha Raikhel, editor-in-chief, proposed changing the name to *Plant*. Members, the Publications Committee, and the Executive Committee all had input into the pros and cons of changing the name, as I've detailed in previous newsletters. Since my last President's Letter, lawyers and an ad hoc committee were also consulted. The lawyers expressed their opinion that the name *Plant* was problematic from a legalistic standpoint, and other names were investigated. The top candidates considered by the ad hoc committee were *Plant Systems*, *Plant Systems Biology*, and *Plant Function*. The most obvious alternative name, *Plant Biology*, is not available as it is being used by another journal. The ad hoc commit-

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tee was positive toward changing the name of *Plant Physiology*, but there was only moderate enthusiasm for the names under consideration. The beliefs of members of the Executive Committee were wide-ranging and reflected the many sentiments expressed by the members voicing their opinions on the web site and in the many letters written to me. After considering all the information gathered during the previous 10 months, a majority of the Executive Committee voted on August 2 to retain the name *Plant Physiology* for the journal. This was reported at both the opening ceremony and the business meeting held during the annual meeting.

An exciting publication that is under way is an electronic version of *The Arabidopsis Book* (TAB), edited by Chris Somerville and Elliot Meyerowitz. When finished, TAB will contain 100+ chapters with about 25 percent to 30 percent of the chapters being revised each year, resulting in a dynamic, up-to-date web-based reference book. Each chapter is a detailed review of an important and interesting topic being studied in the plant *Arabidopsis thaliana*, with reference to what is known in other plants and other kingdoms. TAB will be free of charge and available only on the Internet. Each of the chapters can be downloaded as PDFs, enabling their use for reference or teaching. On August 2, the Executive Committee approved funds to mount and maintain this book on the web as a public service. Partial support is also provided by BioOne, who will host the book on its web site. Each chapter will have HTML/SGML tagging and extensive links to databases such as TAIR, CrossRef and ISI, and PubMed. The first 40 chapters will be available at www.bioone.org later this fall. (See page 22 of this issue of the *ASPB News* for more information.)


Did you know that our Society has an Education Foundation? In 1995, under President Russell Jones, the Society en-

dowed the foundation with \$1 million, roughly one-third of its reserves at the time. The mission of the Education Foundation is to provide information and education to increase the public's knowledge about the role of plants in all areas of life. The Foundation has had an active year. It partially sponsored the second edition of *Plants, Genes, and Crop Biotechnology*, by Maarten Chrispeels and David Sadava, which was published this past July by Jones and Bartlett Publishers. The Foundation's film, which was previewed at the annual meeting in Providence last year, has been extensively edited and renamed *History's Harvest: Where Food Comes From*. It is now available to members on video or CD for a small handling fee, and television distribution is being actively pursued. We all owe the chair of the Foundation's board, Bob Goldberg, a great deal of thanks for the tremendous amount of time and energy he spent stewarding the film's production during the past two years. In addition to providing the lay public a fun way to learn about the history of agriculture and where our food comes from, the film provides an example of what the Foundation can accomplish, which will be crucial for the upcoming fundraising campaign. A major goal in the coming year will be to brainstorm additional projects. Recognizing the wealth of expertise and creativity of the membership, the Foundation board plans to solicit members for feedback using the ASPB web site. Stay tuned for more news as the board and its new chair, Dan Cosgrove, move forward.

I would like to extend a special thanks to our very active Membership Committee (Dina Mandoli, chair, Jeff Habben, Edgar Spalding, Joyce Foster, Jon Monroe, Carol Reiss, Steve Rodermel, and staff liaison Kelley Noone) for carrying out a postcard and web campaign that resulted in 755 new members. At the time I'm writing this letter in late August, we have 5,959

members in our Society.

It is especially important to recruit young people to participate in Society affairs, as they are our lifeblood and will be our future leaders. As an incentive to young scientists, the Executive Committee in February approved \$10,000 toward free memberships for graduate students and postdoctoral fellows on a first-come, first-served basis, resulting in 252 new postdocs and graduate student members. It is my sincere hope that every one of these members will rejoin next year and encourage their peers who have never been members to join as well. We have budgeted an additional \$10,000 for 2003 to award one-year free memberships to postdocs and graduate students who have never been members. Please help to impress upon our younger colleagues how crucial networking is for the continued development of their careers and how important their scientific and service contributions are for moving plant biology forward.

The field of biology is moving forward at an incredible rate, and we as individual scientists and members of societies must be flexible to accommodate and respond to new directions and initiatives. We must be imaginative to keep plant biology at the cutting edge. Interaction, communication, and interdisciplinary research are key components to success in our ever-evolving world. It is important to have the social and political connections that membership and participation in a society enable, and it is more important than ever for societies to reach out and communicate with other groups. This will be crucial for the advancement of research, education, and outreach throughout our ever-shrinking world. Being your Society's president has been an incredible learning experience for me, and I am grateful for the opportunity. 

Vicki Chandler

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Mary Lou Guerinot Elected to Lead ASPB in 2003–2004

Mary Lou Guerinot becomes ASPB president-elect October 1 and will assume the position of president in October 2003. She is a professor in the Department of Biological Sciences and vice provost of Dartmouth College. She earned her bachelor's degree in biology at Cornell University in 1975 and her Ph.D. in biology from Dalhousie University in 1979. After completing postdoctoral studies at the University of Maryland and at the MSU–DOE Plant Research Laboratory, she came to Dartmouth as an assistant professor in 1985. She was promoted to an associate professor with tenure in 1991 and to full professor in 1997. She was chair of the Department of Biological Sciences from 1994 to 1998 and served as the associate dean of the Faculty for the Sciences from 1998 to 2001. At Dartmouth, she is on the advisory board for the Molecular Biology and Proteomics Core Facility, the Center for Biological and Biomedical Computing, and the Women in Science Program.

Guerinot is a molecular geneticist whose principal expertise and research interests are

in the area of metal transport and regulation of gene expression by metals. She has focused on iron because increasing the ability of plants to take up iron could have a dramatic impact on both plant nutrition and human health. Iron deficiency afflicts more than 3 billion people worldwide, and plants are the principal source of iron in most diets. She has employed the tools available in the model plant *Arabidopsis* to identify genes involved in iron homeostasis. Her work also has applications for environmental remediation with the goal of using metal-accumulating plants to remove toxic metals from the soil. In addition to her work on *Arabidopsis*, Guerinot studies aspects of metal transport and regulation in the *Bradyrhizobium*/soybean symbiosis.

Guerinot has taught genetics and microbiology lecture and lab courses, as well as upper level undergraduate and graduate courses in molecular genetics and biochemistry. She has served on numerous competitive grant panels including the USDA Nitrogen Fixation



panel, the NSF Metabolic Biochemistry panel, the NSF Integrative Plant Biology panel, the NIH Biomedical Research and Research Training Grant Committee, and the Deutsche Forschungsgemeinschaft *Arabidopsis* Proteome Network peer review panel.

She is currently serving on the editorial board of the *Journal of Bacteriology* and is an associate editor of *Plant Molecular Biology*. She has served on the selection committee for the American Society for Microbiology's Undergraduate Fellowship Program for the past eight years and is a member of the selection committee for the Martin Gibbs Medal for ASPB. She is a member of the 20-year review committee for NSF's Long Term Ecological Research (LTER) Program. She has been a member and co-chair of the North American *Arabidopsis* Steering Committee, as well as a member and chair of the Multi National *Arabidopsis* Steering Committee. She has also served as a member of the *Arabidopsis* Biological Resources Center Advisory Board. 🌱

Nick Carpita Elected to Executive Committee, 2002–2005

Nick Carpita will serve as an elected member to the Executive Committee from October 2002 through September 2005. Carpita is a professor in the Department of Botany & Plant Pathology at Purdue University, where he started as an assistant professor in 1979. He earned his B.Sc. in 1972, in biological sciences, from Purdue and his Ph.D. in 1977, in plant physiology, from Colorado State University. He was a postdoctoral research associate in the MSU–DOE Plant Research Lab, Michigan State University (adviser: Debby Delmer); a visiting professor and guest professor at the Institute Pflanzenbiologie, Universität Zürich, Switzerland; and a guest professor at the Instituto Botânica, São Paulo, Brazil.

Carpita's research interests focus on the functional architecture of the plant cell wall,

including the synthesis of polysaccharides in vitro, polymer dynamics during growth and development, and identification of polysaccharide synthase and hydrolase genes and deduction of their specific functions.

In 1991, he won Purdue University's Agricultural Research Award. He has been a member or head of numerous panels and was coordinator of "CytoNet," a cytoskeleton–cell wall continuum research group. He has served on the editorial boards of *Plant Physiology*, *Planta*, and *Methods in Cell Science*. In 2003, he will be vice chair of the Gordon Research Conference on Plant Cell Walls. He is a member of Sigma Xi, Gamma Sigma Delta, the American Society for the Advancement of Science, the International Society for Plant Molecular Biology, and ASPB. 🌱

ASPB Summer Undergraduate Research Fellowship (SURF)

Deadline for applications is postmark of February 4, 2003.

For details see our web site at <http://www.aspb.org/education/summerundergrad.cfm> or contact Paula Brooks at paula@aspb.org.



Plant Biology 2002: Heightened Frontiers in Plant Biology

Some 1,300 attendees gathered at the Adam's Mark Hotel in Denver, Colorado, for the Plant Biology 2002 meeting. Attendees enjoyed the dry, warm, sunny climate of Denver and participated in numerous scientific and social events. Here are a few of the highlights!

Five Major Symposia Are Foundation of Meeting

Major highlights of Plant Biology 2002 included the five major symposia, which focused on such diverse areas as "Transition to Flowering," chaired by Rick Amasino; "Plant Responses to Global Climate Change" (co-sponsored by *Plant, Cell & Environment*), chaired by Steve Long; "The Dynamic Cytoskeleton in Plant Cell Biology," chaired by Chris Staiger; "High Throughput Plant Biology in the Post-Genomics Era" (the Gibbs Medal Symposium and co-sponsored by the USDA-NRI Program), chaired by Ken Feldmann; and "Dynamic Processes" (the President's Symposium), chaired by Vicki Chandler.

Thanks to Meeting Sponsors and Exhibitors

The organizers of Plant Biology 2002 would like to take this opportunity to again thank the sponsors and exhibitors for their generous support. The Gold Level Sponsor was *Plant, Cell & Environment*. Other key sponsors included USDA-NRI Program; Pioneer Hi-Bred International, Inc., a Dupont Company; Ceres, Inc.; ProdiGene; Torrey Mesa Research Institute; and the ASPB Education Foundation. In addition, an excellent selection of almost 30 exhibitors presented their products and services to all attendees for three days in the exhibit hall.

ASPB Awards Ceremony and Shull Award Symposium

Recipients of six awards were announced: Corresponding Member—Göran Sandberg, Swedish University of Agricultural Sciences, Umeå; the Charles Reid Barnes Life Member Award—Russell Jones, University of California at Berkeley; the Steven Hales Prize—Elisabeth Gantt, University of Maryland, College Park; the Charles F. Kettering

Award—Gerald E. Edwards, Washington State University, Pullman; the Young Scientist's Best Paper Award: *Plant Physiology*—Frans J. M. Maathuis, University of York, York, United Kingdom; and the Young Scientist's Best Paper Award: *The Plant Cell*—Jason W. Lilly, Cornell University, Ithaca, New York. Following presentation of the awards, the 2001 Shull Award winner, Dr. Detlef Weigel of Salk Institute, La Jolla, California, and Max Planck Institute for Developmental Biology, Tübingen, Germany, gave an address titled "From Floral Induction to Floral Patterning." Detlef's talk set the stage for the "Transition to Flowering" symposium that followed.

Perspectives of Science Leaders/2002 ASPB Leadership in Science Public Service Award

The ASPB Committee on Public Affairs sponsored the annual Perspectives of Science Leaders Program. Dr. Norman Borlaug, distinguished Nobel Peace Prize laureate and father of the Green Revolution, received the award. He was also the featured speaker and inspired a standing-room-only audience. (This presentation was videotaped, and we hope to have it available on the ASPB web page for viewing in the near future.)

Plant Biology 2002 Undergraduate Networking Pre-Mixer/Poster Session

This annual event was free, and all undergraduate attendees were encouraged to participate and present their posters. More than 50 students mingled with each other and various Society leaders to share their research, network, and learn how to get the most out of the rest of the meeting.

Plant Biology 2002 attendees deep in thought and discussion at the posters.





Roger Hangerter demos his dancing plants video clip to Andy Slade of John Wiley & Sons and Bob Buchanan.



Above: Ann Hirsch talks with ASPB Public Affairs director Brian Hyps at the ASPB exhibit booth.

Left: Machi Dilworth and Dick Flavell enjoy a moment at the ASPB Public Affairs Booth.

Plant Biology 2002 Opening Reception and Mixer

This popular event was free to all meeting registrants. The wide assortment of food and libations served as the perfect backdrop for attendees to reconnect with old friends, meet new people, and map out the busy week ahead.

Small Colleges/Primarily Undergraduate Institutions Breakfast

About 50 people gathered for an informal breakfast meeting. This annual event serves as an opportunity to bring people from PUIs together so that they can network, share information on strategies for teaching and research in plant biology, and explore new opportunities.



Attendees enjoy the networking opportunities at the coffee breaks between sessions.

Committee on Minority Affairs—Sponsored Speaker and Luncheon

The Committee on Minority Affairs sponsored its seventh annual luncheon for all attendees. The featured speaker was Dr. Ray Rodriguez, professor at the University of California, Davis. Dr. Rodriguez spoke on “Transgenic Crops: Frankenfood or a New Paradigm for Improving Global Health and Nutrition?” before an audience of 150 people. For a full write-up, see page 16 in this issue of the *ASPB News*.

TAIR Workshops

The Arabidopsis Information Resource, Carnegie Institution of Washington, held two heavily attended workshops that allowed par-

ticipants to learn about this valuable resource. The first workshop was targeted to the new user and gave an overview of the types of data and data analysis programs available at TAIR. The second workshop was targeted to more frequent users of TAIR who wanted to take maximum advantage of the data and analysis tools on the TAIR site.

Career Workshop I—“Where Are the Job\$?” for Postdocs and Graduate Students

This workshop was organized by the ASPB Women in Plant Biology Committee. It was designed for postdoctoral associates and graduate students seeking information on scientific career choices. The speakers repre-

sented careers in law, academia, industry, government, and regulatory fields. Attendees listened to short presentations, then had an opportunity to ask questions and interact with the speakers in small groups.

Career Workshop II—“How to Get the Jobs” for Postdocs and Graduate Students

Also organized by the ASPB Women in Plant Biology Committee, this workshop was designed for postdoctoral associates and graduate students who are focusing on the mechanisms of getting a job. The speakers addressed a range of topics, including the risks and benefits of employment

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ASPB employees Stefanie Shamer and John Long staff the ASPB Publications Booth.

choices, presentation skills and tips for selling yourself to an employer, letters of recommendation (their importance and how to get the best ones), résumés and job application packages, and interview and negotiation skills.

Public Affairs Media Relations Workshop

A panel of presenters offered advice for scientists on how to conduct effective communications with the news media. Their message: Know what you want to say before the interview and be sure you deliver your message. Regardless of what the questions are, you get to give the answers, so be in control of what you say. The workshop was sponsored by the Committee on Public Affairs.

PUI Workshop I— “Resources for Research at Primarily Under- graduate Institutions”

This new workshop was organized by Jon Monroe of James Madison University and addressed issues relating to developing successful research programs at PUIs. Topics included tips on writing grant proposals from the PUI perspective and how to develop collaborations with colleagues



Attendees check out the products, publications, and services featured in the exhibit hall.

working in R1 institutions, industry, or nongovernmental organizations. Several panelists described their experiences and then led a discussion.

PUI Workshop II—“Job Opportunities at Primarily Under- graduate Institutions”

This new workshop was organized by Mark Brodl of Trinity College and focused on what it is like to work at a PUI and how to successfully compete for those positions. Several panelists described their job-search experiences and their service on search committees. Discussion topics included advice on writing the application and what to expect during the interview.

“Getting Smart about Intellectual Property (IP) Management” Workshop

Deborah Delmer, associate director food security, The Rockefeller Foundation, New York, chaired this new workshop. Many of the enabling technologies needed for the improvement of plants through biotechnology were developed by scientists in the public sector, but the freedom to use many of these technologies is now seriously hampered by exclusive licensing agreements to the “Big 5” biotechnology companies. With a few short formal presentations, followed by open dialogue, the workshop addressed the problems surrounding IP issues from the follow-



Peggy Lemaux looks on as Dr. Norman Borlaug answers questions from the audience. (See full story at page 31.)

ing standpoints: (1) how this loss of freedom to operate affects the ability to improve subsistence crops important to the developing world; (2) how it similarly affects the development and commercialization of important minor crops; (3) the need for scientists in the public sector to understand why proper IP management is an important component of their research programs; (4) the need for development of better working relationships between research scientists and technology transfer offices in public-sector institutions; (5) IP issues important to federal funding agencies; (6) new initiatives being developed by the Rockefeller and McKnight Foundations for collective IP management.

Women in Plant Biology Committee-Sponsored Speaker and Luncheon

This annual luncheon, sponsored by the Women in Plant Biology Committee, attracted

170 attendees. Dr. Nancy Dickey of Texas A&M University, the featured speaker, gave a fascinating presentation titled "Will the Glass Ceiling Finally Retract in the 21st Century?" (See the full story on page 15 of this issue of the *ASPB News*.) Dr. Dickey is president of the Texas A&M University Medical School and recent past president of the American Medical Association. Drawing on her experience as a woman in the medical profession, she addressed many questions facing women in traditionally male-dominated fields. For example: What are the barriers? Why do some people seem to get past the barriers? Are there lessons to be learned? Do you want to learn them?

Special thanks to corporate sponsors ProdiGene; Torrey Mesa Research Institute; Ceres, Inc.; and Pioneer Hi-Bred International, Inc., a DuPont Company, for their contributions to subsidize postdoc and student attendance.

USDA Reception

Many employees of the U.S. Department of Agriculture attended this annual reception. National program leaders John Radin and Mary Kay Walker-Simmons enjoyed the opportunity to address and mingle with this diverse group.

Education Workshop

Pioneer Hi-Bred International, Inc., a DuPont Company, sponsored an Education Workshop on engaging K-12 students and teachers in the process of science. The workshop, coordinated by the ASPB Education Committee, focused on successes, challenges, and funding opportunities in this area. Speakers for the workshop included Paul Williams of Wisconsin Fast Plants. Paul was also recognized during the program for his outstanding work in bringing an understanding and appreciation of plant biology to thousands of teachers and students. Machi Dilworth of the National Science Foundation and Patricia

Suchian of the Howard Hughes Medical Institute were also featured speakers.

"Happy Birthday Barbara McClintock"

The Women in Plant Biology Committee celebrated the 100th anniversary of Dr. Barbara McClintock's birthday during the poster and exhibits session on Monday evening. Many attendees stopped by the Women in Plant Biology Committee's booth for birthday cake and to learn more about the committee's goals and activities.

"Billiards, Micro-Brews & More Party" at Denver's Wynkoop Brewing Co.

On Tuesday evening many delegates enjoyed a short walk or took the free shuttle to the Wynkoop Brewing Co. By all accounts everyone enjoyed a fun evening at Denver's largest microbrewery and billiard hall. Admission included a buffet dinner that featured a large selection of appetizers, beer and other beverages, and unlimited use of tournament-sized billiard tables, shuffleboard, dart boards, foosball tables, a jukebox, and more. A rousing and competitive billiards tournament was a highlight for many. (After eliminating their team early in the tournament by sinking the 8-ball in the wrong pocket, Roger Hangarter's graduate student was apparently later seen looking for a new lab to join.) The winning team: member Ken Keegstra and ASPB exec John Lisack. Congratulations, Ken and John!

Colorado Rockies vs. Cincinnati Reds Baseball Game

After the meeting ended, 150 Plant Biology 2002 attendees and their guests had the opportunity to unwind and relax by enjoying a major league baseball game with their colleagues in the ambience of Coors Field. The Plant Biology group was treated to a Rockies grand slam that landed in the seats just

below their section. The Rockies beat the Reds 7-2!

Plant Biology 2002 T-shirts

Once again we would like to thank Dave Longstreth of Louisiana State University for designing the special meeting t-shirt. The attractive and symbolic deep blue t-shirt was a big hit.

Plant Biology 2003: See You in Hawaii!

With Plant Biology 2002 now part of the archives, the Program Committee is immersed in the details of planning Plant Biology 2003, which will be held July 26-30, 2003, at the Hawaii Convention Center in Honolulu. This annual meeting is expected to be better than ever with the invited participation of the Japanese Society of Plant Physiologists, Australian Society of Plant Science, and plant biology-related societies in Korea, China, Taiwan, New Zealand, and other Pacific Rim countries. The beautiful setting and central Pacific location will combine to make this an exciting and productive meeting. Save the dates and watch the *ASPB News* and the web page for further details! 🌺

Roger Hangarter

ASPB Secretary and Program Chair

Susan Rosenberry

ASPB Program Committee Staff Liaison



Jim Siedow and Donna Nakai point the way to Hawaii for Plant Biology 2003!



Take a Look at Plant Biology 2002!



Keynote presenter Norman Borlaug spoke to a standing-room-only crowd and after his talk answered questions from members. (See the full story on page 31.)



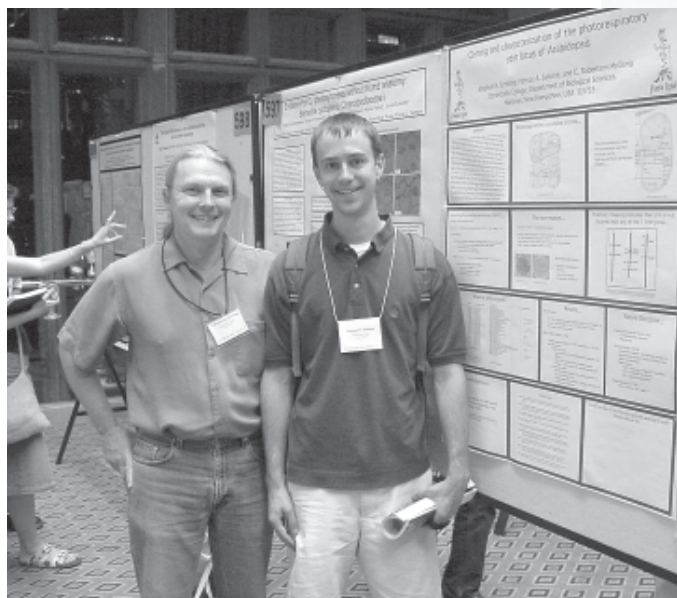
One of the highlights of any Plant Biology meeting is the informal networking with peers from around the world. In Denver, attendees gathered in small groups during breaks to talk about the latest ideas heard in symposia and workshops.





Large crowds spent time reviewing the many rooms full of posters in Denver.

ASPB recognized Paul Williams with a plaque presented by President Vicki Chandler in recognition of his extraordinary success in education outreach. Through Wisconsin Fast Plants and Bottle Biology, Paul has brought the thrill of discovery in plant biology to 100 million students and a million teachers. (For more on Paul and his presentation at the Education Workshop in Denver, see the Education Forum on page 37 of this issue.)



During summer 2001, the first group of SURF (Summer Undergraduate Research Fellowships) winners conducted research that was presented at Plant Biology 2002. Pictured here is SURF winner Stephen Schilling (right), Dartmouth College, Department of Biological Sciences, with his mentor Rob McClung.



Award Honorees at Plant Biology 2002

Congratulations to the winners of this year's ASPB awards. The following presentations were made during the opening ceremony for the ASPB annual meeting, Plant Biology 2002, on Saturday, August 3, 2002, in Denver, Colorado.

Corresponding Membership Award

Göran Sandberg

Swedish University of Agricultural Sciences, Umeå

This annual honor, initially given in 1932, provides life membership and Society publications to distinguished plant physiologists from outside the United States.

Professor Göran Sandberg has made exceptional contributions to our understanding of the physiology, chemistry, biochemistry, and molecular biology of cytokinins, auxins, and other plant hormones in higher plants. His studies have used basic science research approaches to look at both model systems as well as the more intractable, but economically important, forest tree species. His early work involved the analysis of hormonal regulation of plant growth, mainly from a whole plant perspective. Beginning in the late 1980s, however, he began detailed study of phytohormone metabolism and regulation, pioneering novel methods based on mass spectrometry. During this

period his laboratory became an important destination for researchers from many countries who needed to apply these techniques that were not available elsewhere. Work from his laboratory made practical physiologically relevant hormonal studies in precise small tissue samples. Advanced metabolic studies revised or changed many theories concerning cytokinin biosynthesis, *Agrobacterium rol* gene function, auxin regulation in transgenic plants, auxin catabolism, and hormone homeostasis. His current focus is on the functional analysis of genes involved in growth and development.

Professor Sandberg is currently director of the Centre for Forest Biotechnology and Chemistry, a major partner in the Swedish Tree Genomics Initiative. He is also vice director of Umeå Life Science Center and director of research for Umeå Plant Science Centre (UPSC). UPSC is a 150-member center of excellence in experimental plant biology located in Umeå. In addition, he is serving as CEO during the start-up phase of a new company, SweTree Genomics. He has had, and continues to have, a profound influence on the development of modern plant science in Sweden as well as in much of the

European Community. His laboratory has served as a focal point for scientists worldwide, with many experimentalists taking advantage of his welcoming hos-

pitality, his scientific insight, and his dedication to the development and use of exacting methodology.

Charles Reid Barnes Life Membership Award

Russell Jones

University of California at Berkeley

This is the oldest ASPB award, established in 1925 at the first annual meeting of the Society, through the generosity of Dr. Charles A. Shull. It honors Dr. Charles Reid Barnes, the first professor of plant physiology at the University of Chicago. This annual award of life membership in the Society recognizes meritorious work in plant physiology to an individual who is at least 60 years old.

Dr. Russell Jones's interest in plant hormones, and particularly in gibberellins, began with his Ph.D. work at Aberystwyth and his work as a postdoctoral fellow in the Plant Research Laboratory at Michigan State University. He went on to a 35-year academic career at the University of California at Berkeley, developing the Barley aleurone as a cellular model for plant hormone action. Russell was the first to provide a comprehensive ultrastructural study of the effects of gibberellin on plant cells. This was the beginning of his intense interest in the endomembrane system of aleurone cells, in intercellular transport and secretion of proteins and ions, and in the regulation of these processes by GA and ABA. He established the roles of calcium and calmodulin in these processes involving intracellular ion pumping and ion channel regulation. More recently, he extended his aleurone work to investigations of the antagonistic



ASPB President Vicki Chandler (left) with 2002 award winners Elisabeth Gannt, Gerald Edwards, and Russell Jones

roles that GA and ABA play in determining the timing of ROS mediated programmed cell death in aleurone cells. By continuously employing an elegant blend of plant cell biology, molecular biology, biochemistry, and physiology, Russell has created a body of knowledge that represents one of the most integrated studies of hormonally regulated processes available today.

In addition to his highly productive research program, Russell has made exemplary contributions to the field of plant physiology through numerous public service efforts. He has served on the editorial board of *Annual Review of Plant Physiology and Plant Molecular Biology* for 20 years and as managing editor of *Planta* since 1992. He has also served as president of ASPB and is currently president of the International Plant Growth Substances Association. As president of ASPB, Russell spearheaded the establishment of the ASPB Education Foundation, the goal of which is the dissemination of knowledge and understanding of plants among professionals and the public.

Stephen Hales Prize

Elisabeth Gantt

University of Maryland, College Park

This award honors the Reverend Stephen Hales for his pioneering work in plant biology published in his 1727 book Vegetable Staticks. It is a monetary award established in 1927 for a resident of North America, whether or not a member of the Society, who has served the science of plant biology in some noteworthy manner. The award is made biennially in even-numbered years. The recipient of the award is invited to address the Society on a subject in plant biology at the next annual meeting.

Like Dr. Hales, Beth Gantt has been a pioneer in her field, breaking new ground in several different aspects of plant biology. Beth began her pioneering contributions to our un-

derstanding of photosynthesis in red algae and cyanobacteria in the 1960s when she initiated a series of groundbreaking contributions on the structure and function of the photosynthetic apparatus of these organisms. Beth described striking arrays of granules associated with the chloroplast thylakoids, structures that became known as phycobilisomes. She went on to work out procedures for the isolation of intact phycobilisomes from a wide array of representative organisms and to identify new protein components. These findings led her to pursue the function of the structures and elucidate their distribution.

Following this early work, Beth investigated other features of phycobilisomes and how they relate evolutionarily to chloroplasts—work that is still ongoing in her lab. In the early 1990s, she initiated collaborative studies on the biosynthesis of carotenoids, and she has used several systems to identify the path of carotene biosynthesis and the enzymes involved in this process. This work has filled in major gaps in our understanding of the genes and enzymes functioning in these pathways. She continues to add knowledge critical to our understanding of carotenenes.

Beth's contributions to her field are not limited to research. She has given tirelessly and effectively of her time so as to establish a superb record of professional service. Beth has served on numerous committees, and she has also given excellent service to ASPB on countless occasions, serving as secretary and president of the Society, as well as on the Executive Committee and other committees. Throughout her career, she has been a model for her profession.

In short, Beth has integrated the qualities of research scientist, educator, community participant, and leader in the field of plant physiology and phycology, and she has made substantial contributions that span four decades.

Charles F. Kettering Award

Gerald E. Edwards

Washington State University, Pullman

This award was established by an endowment from the Kettering Foundation in 1962 to recognize excellence in the field of photosynthesis. It is a monetary award to be given in even-numbered years.

Gerald Edwards's work in the area of carbon metabolism highlights a career that has spanned more than three decades and resulted in over 300 publications.

Gerry's research has focused on the myriad mechanisms of photosynthetic carbon assimilation in C_3 , C_4 , C_3 - C_4 intermediates, and CAM plants. He has led the way in this research by developing the procedures to measure carbon fixation in isolated cells, protoplasts, and organelles derived from protoplasts. Starting with his postdoctoral work with C. C. Black, and continuing in his own lab in Madison, he mechanically and then enzymatically isolated and purified mesophyll protoplasts and bundle sheath strands from different C_4 monocots. Using these preparations he provided clear evidence that key enzymes of the carboxylation phase of the C_4 cycle (e.g., PEPC, carbonic anhydrase) are in the mesophyll cells, and that C_4 acid decarboxylases and enzymes of the regeneration and carboxylation phase of the C_4 cycle are in bundle sheath cells. This led to work in which, among other things, he and his colleagues discovered an ATP translocator, a pyruvate transporter, and a phosphate transporter unique to C_4 cycle function.

Gerry has also worked extensively with C_3 - C_4 intermediates, which are of interest relative to their mechanism for reduction of photorespiration and the evolution of C_4 plants. The difference in magnitude

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of photorespiration between C_3 , intermediates, and C_4 species of *Flaveria* was determined through analysis of the effects of O_2 , CO_2 , and temperature on gross rates of O_2 evolution and CO_2 fixation. The analyses show that as CO_2 becomes limiting (e.g., via decreased stomatal conductance or high temperatures) there is an increased partitioning of linear electron flow into the energy-consuming processes of photorespiration, and a point is reached where it is clearly advantageous to have assimilatory mechanisms that reduce photorespiration.

With C_3 plants, Gerry has worked actively on the mechanism of photorespiration, defining temperature dependence of O_2 inhibition of photosynthesis relative to solubility of CO_2 and O_2 , competitive inhibition by O_2 , and generation of CO_2 in photorespiration. He has also worked extensively on CAM plant metabolism, studying in particular the inducible CAM plant *Mesembryanthemum crystallinum* grown in the C_3 versus CAM mode. This approach allowed intracellular pathways of the different phases of photosynthesis in CAM to be constructed in malic enzyme and PEP-carboxykinase type CAM species.

Clearly, Gerry has made remarkable contributions to the field of photosynthetic research during his career that continue today. Last year a three-continent collaboration involving Gerry culminated in a paper published in *Nature* describing a land plant lacking Kranz anatomy that carries out both C_3 and C_4 photosynthesis within a single cell. Recently, he has been included in ISI's select list of Highly Cited Researchers, an honor that again speaks to his impact on the field.

Young Scientist's Best Paper Awards

Each year, both Plant Physiology and The Plant Cell honor a young scientist who has published in the journal during the

previous year. Papers must show truly novel mechanistic or conceptual insights at any level of biological complexity, from the molecular to the whole plant.

Plant Physiology

Frans Maathuis

University of York, United Kingdom

Dr. Frans J. M. Maathuis is the winner of the second annual *Plant Physiology* Young Scientist's Best Paper Award for the contribution that he co-authored with Dr. Dale Sanders (see *Plant Physiology* **127**: 1617–1625) entitled "Sodium Uptake in Arabidopsis Roots Is Regulated by Cyclic Nucleotides." In this paper, the authors, both of the University of York, present evidence based on a diversity of techniques to support the idea that a cyclic nucleotide-gated channel is involved in allowing Na^+ influx into Arabidopsis roots under high salt conditions. This highly original finding will undoubtedly have broad implications for understanding the basic biology of salt stress in glycophytic plants and may conceivably lead to the genetic engineering of increased salt resistance in agricultural crops.

Frans's general research interests are in plant nutrition and abiotic stress, with particular emphasis on ion transport across plant membranes. In particular, he has pioneered the application of electrophysiological techniques to address fundamental questions in plant physiology. During his Ph.D. studies at the University of Groningen in the 1980s, he set up the first plant patch-clamp facility in the Netherlands to compare the vacuolar membrane transport properties of salt-sensitive and salt-tolerant *Plantago* spp. He continued this work while he was a postdoctoral



fellow at the University of Sussex in the United Kingdom, this time studying the role of the slow vacuolar (SV) channel in salt

Frans J. M. Maathuis

tolerance of the halophyte *Suaeda maritima*.

In 1992, Frans started work in the Biology Department of the University of York as a postdoctoral fellow with Dale Sanders. During the ensuing years he studied the mechanisms of low- and high-affinity K^+ uptake in plants. Since 1998, he has worked as an independent research fellow in York. His research interest has returned to the area of plant salt tolerance, where a key question concerns the identification of pathways for Na^+ entry into plant roots.

On Tuesday, August 6, he presented a talk during the "Membrane Transport" mini-symposium meeting at Plant Biology 2002.

The Plant Cell

Jason Lilly

*Boyce Thompson Institute for Plant Research
Ithaca, New York*

Dr. Jason W. Lilly is the recipient of the second annual Young Scientist's Best Paper Award for a paper published in *The Plant Cell*. His paper, "Cytogenomic Analyses Reveal the Structural Plasticity of the Chloroplast Genome in Higher Plants," was coauthored by Michael J. Havey, Scott A. Jackson, and Jiming Jiang (*Plant Cell* **13**: 245–254). Jason and his coauthors used a fiber FISH-based cytogenomic approach to analyze the structure and organization of chloroplast DNA molecules from Arabidopsis, tobacco, and pea. They found chloroplast DNA in both linear and circular molecules, and estimated that only 25 percent to 45 percent of the chloroplast DNA within developing leaves consists of circular molecules. The authors observed linear and circular molecules containing one to four copies of the chloroplast genome. They demonstrated the existence of large multimers consisting of six to 10 genome equivalents and further discovered rearranged chloroplast DNA molecules of incomplete genome equivalents, which led them to conclude that higher plant chloroplast DNA is more structurally plastic than previous sequence and electrophoretic analyses have



Jason W. Lilly

suggested. Their work demonstrated how the fiber FISH-based cytogenomic approach allows for powerful analysis of rare events that cannot be detected by traditional techniques. The work documented in the manuscript represents approximately 1.5 years of effort, dozens of slide preparations, and more than 200 microscope hours.

Jason received his undergraduate degree in crop and soil sciences at Michigan State University. He went on to earn his master's and doctorate degrees in plant breeding and plant genetics at the University of Wisconsin under the guidance of Dr. Havey and Dr. Jiang. He is currently an NIH postdoctoral fellow in Dr. David Stern's laboratory at the Boyce Thompson Institute for Plant Research at Cornell University. His work focuses on the *Chlamydomonas reinhardtii* plastid genome, where he is integrating his molecular cytology skills with new functional genomics tools to dissect the structure and expression of this model plastid genome. His long-term research goals are to expand upon the Chlamydomonas genome project and begin to merge ecology, physiology, and genomics to recognize how plant organelles regulate fundamental biochemical processes (photosynthesis and respiration), especially under adverse environmental conditions.

In addition to his research work at Cornell, Jason has supervised three undergraduates and one high school student during the past two years. He is very excited about genomics training and together with Dr. Maureen Hanson has organized and coordinated a week-long course about microarray techniques and analysis for Cornell Plant Cell and Molecular Biology graduate students.

He gave a presentation during the minisymposium on evolutionary genomics on Monday, August 5, at Plant Biology 2002 in Denver. 🌱

Nancy Dickey Addresses “Glass Ceiling” at Women’s Committee Luncheon

“Life is not easy for any of us. But what of that? We must have perseverance and above all, confidence in ourselves. We must believe that we are gifted for something . . . and this thing, at whatever cost, must be attained.”

—Madame Curie

One of the many highlights of Plant Biology 2002 was surely the inspiring presentation by Dr. Nancy Dickey, president, University of the Health Sciences, Texas A&M University System, College Station. Dr. Dickey, the featured speaker at the annual Women in Plant Biology Committee-sponsored luncheon, addressed 170 people on the topic “Will the Glass Ceiling Finally Retract in the 21st Century?”

Dr. Dickey traced the history of women in science through the decades and spoke of equality for women today. Noting several prominent women in politics and the military, Dr. Dickey pointed out that although “we have names that we recognize, we don’t have the same playing field.” She referenced an analysis that indicates that women have “perhaps reached a new plateau where remaining barriers might be even more resistant to change than the hurdles which preceded them,” citing the pay inequity issue among others. The gift to the next generation, according to Dr. Dickey, will be when women are not just achieving “the first,” but when they are achieving frequently enough that their accomplishments are no longer so unusual as to be commented on.

In amusing and often personal reflections, Dr. Dickey outlined her journey as she moved through medical school and private medical practice, to president of the American Medical Association (the AMA’s first woman president), and now president of the University of the Health Sciences in the Texas A&M University System. Based on her perspective, she offered the following advice for penetrating the glass ceiling:

1. Have a vision/dream, a mental picture of where you are going, but remain flexible.
2. Believe in yourself.
3. Surround yourself with a support system.
4. Balance home and family.
5. Learn to negotiate.
6. Seek out mentors and be a mentor.
7. Be an activist.
8. Watch the little things.

She challenged the audience to envision a different future, one with fewer firsts, one with different statistics, one with more cracks in the glass ceiling.

Notes from Dr. Dickey’s talk will be posted online at www.aspb.org/committees_societies/women. 🌱

Rodriguez Addresses Transgenic Crops at Minority Affairs Luncheon

The Committee on Minority Affairs sponsored a well-attended luncheon at Plant Biology 2002 in Denver that featured a provocative presentation by Raymond L. Rodriguez, professor of molecular and cellular biology at the University of California, Davis. Dr. Rodriguez, one of the pioneers of the recombinant DNA revolution, who happens to be the "R" in the widely used vector pBR322, remnants of which remain in nearly all vectors used today, is also chairman and chief executive officer of Davis Bioscience Group, a consulting and venture capital firm in the biotechnology arena. His talk was titled "Transgenic Crops: Frankenfood or a New Paradigm for Improving Global Health and Nutrition?" According to Dr. Rodriguez, the crisis in the agbiotech industry can be traced to the emphasis on input traits such as insect resistance and herbicide tolerance, which tend primarily to increase the producer's profits and are not viewed as necessarily advantageous to consumers. On the other hand, surveys reveal that educated consumers are less resistant to genetically modified foods that provide enhanced output traits. Perhaps, then, the scientific focus in agbiotech should be on those traits that increase the value of a plant product to the consumer, such as therapeutic proteins, altered nutritional metabolites, biomaterials, or even specialty chemicals. Dr. Rodriguez believes that a sea change in attitudes toward agbiotech can be brought about through phytomanufacturing, which he defined as "the application of plant biotechnology and the renewable resources of agriculture to produce value-added consumer products (i.e., output traits) in a sustainable and environmentally friendly manner." 🌱

Committees Meet in Denver

ASPB Executive Committee Report

by John Lisack, Jr.



John Lisack, Jr.

The ASPB Executive Committee met Friday August 2, 2002, and then again on Tuesday, August 6, to review the many activities taking place within the Society, discuss proposals to initiate even more, and perform its financial oversight responsibilities. All but one of the regular members were present and two newly elected members—Mary Lou Guerinot, the future president-elect, and Nick Carpita, future member-at-large—observed the proceedings in preparation for their respective roles, which they assume in October. President Vicki Chandler opened the meeting by acknowledging a very busy year that included

- the editing of the final version of the Education Foundation's film, *History's Harvest: Where Food Comes From*
- the digitization of a large portion of our journals' back content
- thorough investigation and analysis of the proposal to change the name of our journal *Plant Physiology*
- the establishment of a partnership with the commercial publisher John Wiley & Sons to create a joint plant biology book program (and the resultant transfer of marketing and sales of the reference book *Biochemistry & Molecular Biology of Plants*, by Buchanan, Gruissem, and Jones, to Wiley)
- journal page counts that are well above previous years
- the announcement of the latest impact factors: *Plant Physiology* earned its highest rating to date, and *The Plant Cell* remains firmly in its #1 position among non-review plant biology journals

- work on the electronic version of *The Arabidopsis Book* (TAB), edited by Chris Somerville and Elliot Meyerowitz, which addresses all aspects of Arabidopsis biology.

Specific actions taken by the Executive Committee follow:

- Effective January 1, 2003, both journals will initiate corresponding author page charges of \$55 per page to replace the current manuscript handling fee. Corresponding authors who are ASPB members will receive a \$10 discount per page. Page charges were deemed a more equitable way of charging authors, as the fees will be proportional to article length, and the differential provides another substantial benefit to members.
- The *ASPB News* will be offered electronically to all members starting in January 2003. Members who wish to continue receiving the hard copy of the newsletter may do so by checking the appropriate box on their membership renewal form. Because of their time-sensitive nature, the job ads and meeting notices will appear online only beginning in January.
- The following presidential appointments were approved: chair of the Education Foundation—Daniel Cosgrove; member of the Board of Trustees—Elizabeth Hood; member of the Constitution and Bylaws Committee—Douglas Randall.
- The name *Plant Physiology* will be retained following exhaustive investigation of this issue.
- The 2003 budget was approved with estimated expenses of \$6,018,008 and estimated revenues of \$6,051,747.
- An additional \$4,000 was added to the Annual Meeting Travel Grants Program, currently funded annually at \$35,000, to be earmarked for students in the ASPB Summer Undergraduate Research Fellowship Program.
- Based on the resounding success of the career workshops conducted at Plant

Biology 2002, organized by the Women in Plant Biology Committee, \$4,000 was added to the 2003 budget in support of this activity at the 2003 annual meeting.

- Funds were approved to mount and maintain *The Arabidopsis Book*, edited by Chris Somerville and Elliot Meyerowitz, for three years. The 100+ chapters will be online through a contractual agreement with BioOne with about 25 percent to 30 percent of the text updated annually (see the story on page 22).
- The Executive Committee approved the appointment of Dr. Richard Jorgensen as editor-in-chief of *The Plant Cell*, beginning July 1, 2003.
- The Society spent the 2002 Good Works fund (a special reserve fund allocation) on a number of projects:
 - digitization of journal back content
 - Best Papers Awards for both journals
 - an exhibit booth at the Society for the Advancement of Chicanos and Native Americans in Science to promote minority students' pursuit of studies in plant biology
 - support for minority travel to ASPB section meetings
 - one-year free memberships to minority scientists to promote involvement in Society activities
 - an exhibit booth at the National Science Teachers Association meeting to encourage a plant science curriculum
 - production of educational bookmarks promoting plant science
 - assistance to the International Association of Plant Physiologists to develop its web site
 - partial support for a plant biology meeting in Uruguay
 - free or discounted subscriptions to scientists and libraries in developing nations
 - summer salaries and a research stipend to eight undergraduates through the Summer Undergraduate Research Fellowships program

- student travel grants to attend the 2002 annual meeting
- one-year free memberships to postdocs and graduate students to encourage early involvement in the Society.

On Tuesday, August 6, 2002, at 6:00 p.m., the annual business meeting, which gives members an opportunity to meet with the leadership, was called to order and highlights of the year were presented to the 66 attendees. Following President Chandler's summary of activities, which included successful special efforts to increase membership, Ken Keegstra, chair of the Board of Trustees, presented a summary of the financial status of the Society. Highlights included the presentation of a clean, unqualified audit; presentation of our investment policy and yields; and a spreadsheet of the 2003 approved budget. He reported that the Society remains in a very strong financial position.

Representatives for each of our two journals—Rich Jorgensen for *The Plant Cell* and Jan A. D. Zeevaart for *Plant Physiology*—reported that the online manuscript management system is running smoothly, submissions are up, our impact factors remain very high, pages per issue are up, and the time from submission to publication has been significantly reduced. Upcoming special issues were also identified: Plant Reproduction for *The Plant Cell* and The Grasses for *Plant Physiology*.

Program chair Roger Hangarter reported that the Plant Biology 2002 program was very well received and acknowledged that the configuration of the poster set-up could be improved. In the future, the goal will be to situate the talks nearby the posters and exhibits. He asked attendees to make suggestions on how the program could be improved and invited everyone to Plant Biology 2003 in Hawaii.

Rich Jorgensen, vice chair of the 2003 Plant Genetics meeting, provided highlights of the program, which is scheduled to be held at the Snowbird Resort and Conference Center October 22–26, 2003.

President Chandler closed the business meeting by inviting everyone to a fun evening at the Wynkoop Brewing Co., where billiards, darts, shuffleboard, great food, and lots of beer provided the setting for lively socializing throughout the evening.

Education Committee

The Education Committee met August 7 to consider a number of programs offering opportunities in plant biology education for students, teachers, and ASPB members.

Committee member Sheila Blackman, who coordinated the education booth at the annual meeting, along with committee member Gary Kuleck, reviewed the experiences at the booth this year and provided suggestions for future booth activities for Plant Biology 2003. Additional efforts will be made to make ASPB members aware of the Education Booth Competition. This Education Committee-sponsored competition provides \$500 and free meeting registration to members submitting winning entries for booth exhibits and presentations. To learn more about the booth competition for 2003, contact Blackman at blackmas@gvsu.edu.

Blackman is the new editor of the Education Forum in the *ASPB News*. Story suggestions, announcements, and other items can be sent to her at blackmas@gvsu.edu. Eric Davies, chair of the committee, thanked Blackman for her commitment to work on the education booth and Ed Forum. He also expressed his appreciation to Kuleck, the Ed Forum's previous editor, who is completing his term on the committee September 30.

About 50 members attended the Education Workshop on conducting education outreach to K–12 students and teachers. Committee member Larry Griffing and Davies coordinated the workshop. For more on the workshop, see this issue's Ed Forum.

Committee member Ken Nadler proposed holding a workshop at Plant Biology 2003

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that would provide information on online teaching tools, including his approach to providing individualized study and discussion of plant biology in settings ranging up to the largest classrooms. An article written by Nadler on his innovative approach is the only education article ever published by *Plant Physiology*. Nadler also provided demonstrations of his individualized, computer-aided study program at this year's education booth.

Education bookmarks designed by committee adjunct and committee past chair Carol Reiss explaining the ASPB principles of plant biology continue to be in demand by teachers across the nation. Reiss said she will complete design and production of the 12 bookmarks this year, right on schedule. The Executive Committee approved the use of Good Works funds for the printing.

Committee adjunct Dina Mandoli discussed plans for an update of The Cube—a plant biology educational tool that can be folded into a cube. Mandoli developed the concept and design for The Cube, which was distributed by ASPB to thousands of teachers and students and is now out of print.

Committee adjunct Jeffrey Coker discussed results of the undergraduate/high school research survey he and Davies conducted of ASPB members. Davies explained his plans for seeking grant support for further research to study this area. He is continuing as chair of the committee as appointed by Dan Bush, president-elect.

International Affairs Committee

ASPB's International Affairs Committee met Sunday, August 4, in Denver in conjunction with the Plant Biology 2002 meeting. Chair Bob Buchanan led the meeting, which was attended by committee members representing Argentina, India, Japan, and Taiwan. The committee discussed additional ways to disseminate information about our free or reduced-rate subscriptions and books to developing countries, as well as the limited

funding now available to support meetings in those countries. An additional \$2,000 was approved to support the Latin American Congress of Plant Physiology, which will be held in Uruguay this October. Several ideas on the ability to leverage ASPB's funding with matching grants from other organizations were also explored.

The committee also focused on some exciting international networking opportunities that might be very feasible at the Plant Biology 2003 meeting in Honolulu next July. It is anticipated that the Japanese and Koreans will play key roles in this. Continue to watch the *ASPB News* and the Society web page for new articles and announcements from the committee.

Membership Committee

The Membership Committee met August 6 and continued to crystallize and sharpen the benefits of membership and to make ASPB more attractive and useful to current and prospective members. The following is a summary of our latest initiatives.

Changes to the *ASPB News*

Starting in January 2003 the entire newsletter will be put online. It will be accessible through the members-only section of ASPB's web page. When a new issue is available (bi-monthly), an e-mail message with a link will be sent to all members. The electronic version of the newsletter will be the default, but a check box on the 2003 renewal form (electronic or paper) allows members to opt to receive the printed version. Also beginning in January, the Job Ads section will no longer appear in the printed newsletter. Since printing is costly and job information is often out of date by the time the newsletter is sent, all listings will now appear only on the web site (www.aspb.org/jobbank) and will be updated every Friday. The Membership Committee believes that these changes will make the newsletter more valuable and timely for

members; the changes will certainly be cost-effective for our Society!

Journal Page Charges: New Benefit of Membership!

Starting in January 2003, *Plant Physiology* and *The Plant Cell* will drop the handling fee for papers published in our journals. Rather, the journals will assess corresponding authors a per-page charge of \$55. Corresponding authors who are ASPB members will receive a \$10/page discount. The genesis of this move was the realization that over 50 percent of corresponding authors for both journals are **not** members of ASPB! The Membership Committee believes that page charges are a more equitable way for authors to support the costs of publication and simultaneously reward our members for publishing in our journals.

Get-A-Member Campaign

Since launching this new web campaign in April 2002, we have successfully recruited 751 new, paying members to ASPB. This is half-way to our ambitious goal of 1,500 new members for this campaign and represents a five-fold increase in the new members we would anticipate without the campaign! This campaign will run until the end of 2002 so please continue to refer your colleagues and friends via the web to earn your \$20 certificate and the chance to win some great prizes: www.aspb.org/getamember/rules.cfm!

\$10,000 Worth of Free Memberships to Students

We have 252 new student members who are enjoying a free, one-year membership to ASPB courtesy of a unanimous vote by the Executive Committee. The \$10,000 comes from our "Good Works fund" and is a means of supporting budding plant biologists! This program will last for three years. We will keep you apprised of our success at retaining these important new members and will let you know when the next round of free memberships will be offered.

Have any great ideas for us about how the Membership Committee or ASPB in general can serve you better? E-mail mandoli@u.washington.edu or knoone@aspb.org.

Minority Affairs Committee

ASPB's Minority Affairs Committee (MAC) met August 4, 2002, at the Adam's Mark Hotel to discuss current and ongoing initiatives, some of which are highlighted here.

A membership survey designed to gauge the effectiveness of various MAC activities and to help identify members interested in the issue of underrepresentation of various groups in plant sciences and in mentoring young scientists will be sent to all members by e-mail in the coming months.

ASPB will exhibit at the Society for Advancement of Chicanos and Native Americans in Plant Science annual meeting September 26–29 in Anaheim, California. MAC has developed a booth and will provide educational material on careers and opportunities in plant science.

MAC successfully coordinated another year of awarding travel grants to students in collaboration with ASPB's Education Committee and Women in Plant Biology Committee. A total of \$35,000 was awarded to 86 applicants to help them attend Plant Biology 2002.

Program Committee

The ASPB Program Committee met on the final day of Plant Biology 2002. Roger Hangarter, program chair and ASPB secretary, led the meeting, which first focused on Plant Biology 2002 and the lessons learned. The committee discussed the perceived highlights of the meeting as well as its weak points and considered improvements and changes. The committee is looking forward to receiving the results of the post-meeting surveys that were e-mailed to attendees. At first review it appeared that the scientific sessions were strong

and ran smoothly with the new all-PowerPoint format. The "Billiards, Micro-Brews and More Party" at the Wynkoop Brewing Co. on Tuesday night also got high marks.

The committee then turned its attention to certain aspects of the Plant Biology 2003 meeting in Hawaii. The five major symposia are currently set, and the meeting schedule will be altered to begin on Saturday morning instead of in the afternoon. The meeting will end on Wednesday afternoon as usual. The early start will allow for an "afternoon off" for a field trip or other excursion in this unique and beautiful location. The status of ASPB's first specialty meeting, Plant Genetics 2003, was also discussed with vice chair Rich Jorgensen. The exciting scientific program and speakers for this meeting have been confirmed, and a flyer and web page (<http://www.aspb.org/meetings/pg-2003>) are currently available for initial information. The program committee will meet again in October and next March to continue the planning and implementation of these and future meetings.

Committee on Public Affairs

The Committee on Public Affairs met August 3 to discuss a number of programs and initiatives coordinated by the committee and leadership. Dan Bush, ASPB president-elect, and Dan Cosgrove (past president and ex officio member of the committee) participated in the meeting with chair Peggy Lemaux and committee members.

The committee reviewed pending appropriations for the National Science Foundation (NSF), Department of Agriculture (USDA), and Department of Energy (DOE) for fiscal year 2003 and determined plans and priorities of actions. It reviewed aspects of a campaign by many physical scientists who are targeting increases in funding for biological sciences for transfer to the physical sciences purportedly to achieve "more balance" in federal funding. The physical sci-

entists' campaign has given the misleading impression to some in Congress that fundamental biology supported by agencies such as NSF has received a doubling in federal support—the same as biomedical research supported by the National Institutes of Health. This is not true. The Senate Appropriations Committee's recommended increase for funding for the biological sciences at NSF is 3.4 percent, and the recommended increase for NSF Research and Related Activities overall is 14.8 percent. The committee identified information and actions needed in conducting a response to the inaptly termed "more balance" campaign.

Appropriations for the USDA National Research Initiative (NRI) would be on a two-year doubling track if the recommendation of the Senate Appropriations Committee for a 36 percent, or nearly \$44 million, increase this year is eventually enacted. The increase in the House Appropriations Committee version for the NRI is \$10 million. The committee reviewed plans for supporting the NRI and Agricultural Research Service in advance of the eventual House and Senate Conference.

Lemaux reviewed plans for the committee-sponsored media workshop scheduled the next day at the annual meeting, which featured presentations by *Denver Post* science writer Diedra Henderson and ASPB members Terri Lomax, Alan McHughen, and Lemaux. The workshop presented suggestions for effective ways for scientists to interact with the news media.

Committee members reviewed plans for presentation of the ASPB Leadership in Science Public Service Award to Dr. Norman Borlaug and for his Perspectives of Science Leaders talk scheduled later that day. Dr. Borlaug, a Nobel Peace Prize laureate, is recognized as the father of the Green Revolution. The committee also considered potential speakers for the program at the 2003 annual meeting in Hawaii.

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Publications Committee Meeting

Publications Committee members Kris Niyogi (chair), Sally Assmann, Becky Chasan, and Doug Cook, along with Dan Bush (president-elect) and staff members John Lisack, Nancy Winchester, Melissa Junior, and Beth Staehle, met August 3 in Denver to review activities under way in the Publications Department and to begin planning for upcoming initiatives.

Action items included a review of a draft policy statement on dealing with scientific misconduct and a discussion of whether, and how, the Society might support a science writing internship. The ethics policy statement will undergo further revision before being sent to the editors-in-chief for their comments. A final draft will be submitted to the Executive Committee in the winter.

The committee considered aspects of several science writing programs, including the 10-week immersion-into-mass-media internship offered by AAAS, the year-long certificate program held at the University of California, Santa Cruz, and other master's degree programs such as the one held at the University of Wisconsin–Madison. Staff will gather more information on these programs in time for the committee to bring a recommendation to the Executive Committee in February.

Kris Niyogi reported on the outcomes of the preceding day's Executive Committee meeting, including the vote to retain the name *Plant Physiology*; the decision to support the online version of *The Arabidopsis Book*, edited by Chris Somerville and Elliot Meyerowitz; the vote to move both journals from article handling fees to page charges (beginning in January, corresponding authors will pay \$55/page, with a \$10/page discount for corresponding authors who are ASPB members); and the decision to start publishing the *ASPB News* electronically, making the online

version the “default” for members (who may still elect to receive the hard copy as well). Kris also updated his fellow Pubs Comm members on his report to the Executive Committee regarding the search for the next editor-in-chief of *The Plant Cell*.

Staff will soon be able to upload early articles in-house, instead of having HighWire Press do it. This means that early articles can be posted every day, instead of just weekly, and that in the process the Society will enjoy a savings of \$7,500/journal over what we currently pay HighWire to do the work.

Staff also filled the committee in on the new ASPB/John Wiley & Sons publishing partnership. Inventory of *Biochemistry & Molecular Biology of Plants* was moved to Wiley, as part of the new partnership, on March 1, and sales continue to flourish. ASPB and Wiley held a focus group that immediately followed the Publications Committee meeting to discuss the proposed outline for the first ASPB/Wiley joint project: a scaled-down, updated Buchanan et al. textbook that will be geared toward upper-level undergrads.

It was noted that institutional subscriptions were holding steady this year as compared to the same time last year but that individual subscriptions were dropping, as expected, since all Society members receive online access to both *Plant Physiology* and *The Plant Cell* as a membership benefit.

Finally, the online journals: All of *The Plant Cell* now appears online in searchable-PDF format, as does *Plant Physiology* back to January 1993. Both journals are part of HighWire's new Library of the Sciences and Medicine Portal, which allows free access to more than 430,000 full-text research articles published by the 330+ HighWire journals. The portal searches more than 12 million articles from 4,500 Medline journals (see the article on page 26). Bench>Press, our web-based manuscript management system, is moving ahead, and with the production modules now in operation we are moving quickly to fully paperless processes for both journals.

Women in Plant Biology Committee

The Women in Plant Biology Committee met Monday, August 5, to review program initiatives and discuss plans for the upcoming year. The committee sponsored two career workshops at Plant Biology 2002: “Where Are the Jobs?” and “How to Get the Jobs.” Five speakers at each workshop made brief presentations and then spent time answering questions in small breakout groups. Both workshops were well attended (75 and 106, respectively) and offered plenty of lively discussion.

The committee also sponsored a luncheon, which featured guest speaker Dr. Nancy Dickey, president of the University of the Health Sciences in College Station, Texas. Her inspiring talk, titled “Will the Glass Ceiling Finally Retract in the 21st Century?” was enthusiastically received by 170 attendees.

This year the committee recognized the anniversary of Barbara McClintock's 100th birthday during the Monday night reception in the exhibit hall. A display highlighting Dr. McClintock's life and career—and a birthday cake!—provided an opportunity to showcase one of the profession's great women pioneers.

Throughout Plant Biology 2002, the committee distributed a survey in an effort to identify ways in which the Women in Plant Biology Committee can better serve the profession. Results of the survey will be tabulated and posted on the committee's web site.

The committee discussed plans for enhancing its web site, including the addition of handouts from the career workshops, notes from Nancy Dickey's luncheon presentation, and tools to facilitate networking between students and local women in plant science. Plans for Plant Biology 2003 will be discussed in January at the committee's winter meeting.

Elizabeth Hood will step down as committee chair on October 1 and will be succeeded by Mary Tierney. Frederique Guinel-Jefferson has completed her term of service, and the committee welcomes new members Laura Olsen and Lou Sherman.

Foundation News

The ASPB Education Foundation's Board of Directors met Sunday, August 4, in Denver. The meeting was very productive and centered on a strategic thinking exercise that helped the board refine the Foundation's mission, goals, and programs for the future.

During this lively session, board members discussed future strategies by taking a "time trip" into the year 2005 to see what the Foundation will be doing. They came up with a long list of very exciting ideas and began the process of prioritizing those ideas. Over the next few months, the ideas will be summarized and shared with the ASPB membership, giving members a chance to provide comments, input, and new ideas.

The board also discussed the status of current Foundation programs including the film *History's Harvest* and the second edition of the Chrispeels & Sadava text *Plants, Genes, and Crop Biotechnology*, published in July by Jones & Bartlett.

After the film was premiered last summer at Plant Biology 2001 in Providence, the board received a number of suggestions


from members. The film was then reedited, given a new name, and shortened. It was test-marketed to a variety of audiences acting as informal focus groups, and they all had very strong, positive reactions. Beginning in May, the film was made available to ASPB members. At this time the Foundation has identified two distributors who will be bringing the film to U.S. and international television and education markets.

The Foundation formed a committee to coordinate development of supplementary materials to support the film for use in K-12 classrooms. The board felt that it was important to ensure that teachers know how to incorporate the film into their curriculum and lesson plans. The committee plans to test materials with teachers to make sure they are focused on what teachers need and will use.

The Foundation is also working on plans for making the film available to policy-makers to provide information as they make decisions about

different aspects of GM food policy.

Another important part of the meeting centered on a presentation from CTE, a fundraising consulting firm, giving the board information on the steps that go into capital campaigns. The board is in the process of developing fundraising plans that will be put in place in conjunction with the work on mission and goals.

The board reconfirmed that the ASPB Education Foundation was created on the model of other societies whose foundations were established to create and develop programs that further their society's goals. Fundraising for those projects is one important element in the process. A committee was formed to help coordinate the mission, goal-setting, and fundraising planning process. 



From left to right: Dick Flavell, Mary Lou Guerinot, Rob Horsch, Sue Harlander, and Eric Davies are actively involved in a "future-visioning" exercise to see what the Foundation will be like in 2005.



Mark Brodl and Peggy Lemaux prioritize future Foundation programs.

**To the Editor:**

I disagree vigorously with Travis Idol's opinion of the actions of the Earth Liberation Front (ELF), as he stated them in his letter to the editor in the May/June issue of the *ASPB News*.

My dictionary (*Webster's Ninth New Collegiate*) defines terrorism as "the systematic use of terror as a means of coercion." It defines terror, in turn, as "violence committed by groups in order to intimidate a population or government into granting their demands." The arson committed by ELF at the University of Minnesota and similar acts of destruction at other places around the country fit this definition exactly. Labeling this kind of irresponsible, unlawful behavior eco-terrorism is accurate, descriptive, and justified. The fact that no persons have been injured in ELF attacks does not make them any less terroristic. And we should not be dissuaded from labeling an act terroristic simply because it is thereby lumped in with other, more violent acts of terrorism. If the shoe fits . . .

ELF and their ilk are engaged in a campaign to intimidate academic and commercial researchers and the governments that permit their research and stop them from engaging in legitimate investigations of the efficacy and safety of biotechnology. We can never know if biotechnology holds great promise if we are systematically prevented from conducting the studies that will give us those answers.

I am disturbed by a current of ethical relativism in Dr. Idol's letter. Contrary to his opinion ("an arson attack that for many may be philosophically . . . justifiable"), arson is not philosophically justified. It is an act of wanton vandalism, pure and simple.

Dr. Idol takes ASPB to task for its "pervasive bias . . . toward the biotechnology

industry" and its "blatant cozying . . . with the biotech industry in practically every page of the *ASPB News*." As an organization, ASPB has taken a principled stand in favor of the judicious use of biotechnology as a means of alleviating world hunger, improving the lot of indigenous farmers worldwide, improving nutrition for millions of people, most especially children, and dramatically decreasing the use of the chemical pesticides that threaten our environment. That such a stand may accord with commercial aims does not mean that ASPB is "cozy" with the industry. Furthermore, commercial aims are not by definition inimical to society's aims.

It is ironic that Dr. Idol has now moved on from the University of California at Davis to join the faculty of the University of Hawaii. Hawaii is the site of one of the most successful applications of agricultural biotechnology to date, the creation of virus-resistant papaya. That work was accomplished by scientists at public institutions and financed with public money. It was done to save an industry composed almost exclusively of small-scale, family farms.

Researchers in Hawaii have also been victimized by ecoterrorists. Commercial seed companies, the University of Hawaii, and researchers in my laboratory were victims of an ELF-like attack (conducted by self-described "menehunes," i.e., Hawaiian elves) two years ago. In their misguided zeal and ignorance, the ecoterrorists destroyed precious native plants and non-biotech experiments meant to reinvigorate the papaya industry. It will be interesting to see how Dr. Idol fits into his new home.

Paul H. Moore
Honolulu, Hawaii

ASPB Partners with BioOne on New *Arabidopsis Book*

ASPB and BioOne have joined forces to produce *The Arabidopsis Book* (TAB), a fully electronic resource edited by ASPB members Chris Somerville (Carnegie Institution of Washington) and Elliot Meyerowitz (California Institute of Technology). TAB is an attempt at a fresh mode of communication among researchers and an original model for scientific publishing. It will debut as a compilation of more than 100 invited chapters, each reviewing in detail an important and interesting aspect of the plant *Arabidopsis thaliana*. Working in conjunction with BioOne, which will serve as the technical platform for the book, providing the creation of SGML, links, and hosting, ASPB will launch TAB as a dynamic information resource that will evolve with the state of knowledge.

Somerville and Meyerowitz envision evolution of the book's format as well as its contents. Initially, this will be done by taking advantage of hyperlinks, which will be added to cross-reference gene names and references to other chapters, and which will eventually lead from each gene and sequence reference to sequence databases, and from each paper cited to its abstract. Once completed, TAB will become a complementary resource to the many databases that contain specific information about *Arabidopsis*. It will be available via the BioOne site free of charge under an open-access arrangement.

BioOne is a web-based aggregation of research in the biological, ecological, and environmental sciences. It was developed by the American Institute of Biological Sciences (AIBS), SPARC (the Scholarly Publishing and Academic Resources Coalition), the University of Kansas, the Big 12 Plus Libraries Consortium (now the Greater Western Library Alliance), and Allen Press. For more information, visit www.BioOne.org.

For a preview of TAB, visit the ASPB web site at <http://www.aspb.org/publications/arabidopsis/toc.cfm>.

Chrispeels & Sadava's *Plants, Genes, and Crop Biotechnology* Launched at Plant Biology 2002

As genetic modification of crops continues to be debated around the world, with some non-governmental organizations like Greenpeace on one side and biotech companies on the other, along comes a new edition of Chrispeels and Sadava's *Plants, Genes, and Crop Biotechnology* that is eminently suitable as a reference to educate yourself and your students about the controversial issues. It is at the same time a basic plant biology textbook with a strong agricultural/crop improvement slant. The authors discuss the social, economic, and environmental issues raised by the need to feed 9 billion people in a sustainable way.

The second edition of the text was officially introduced at the ASPB meeting in Denver with the authors on hand to sign copies. Unlike the first edition (titled *Plants, Genes, and Agriculture*), which was written entirely by Chrispeels and Sadava, for the second edition they had help from 21 collaborators, all experts in their respective fields. Thus, the book is deeper than the first edition, but also broader in that more social issues are discussed. GM (genetically modified) technologies are presented as the natural extension of plant breeding, and examples of already successful GM crops and


crops that are in the pipeline are described throughout the chapters on growth and development, seed technology, crop evolution, plant breeding, insect control, weed control, human nutrition, plant nutrition, and plant stress. World hunger is discussed in a special chapter, and GM technology is not presented as a panacea to world hunger, but as an essential tool of crop improvement.

Special chapters discuss the difficulty of raising food production in Africa and of making agriculture more sustainable. Social issues such as population control, food insecurity and poverty, the relationship between agricultural research and development, and the ownership of genetic resources are all explored. The final chapter is entitled "Urban Myths and Real Concerns about GM Crops."

Within a month of publication the book had been adopted for courses by more than a dozen universities and colleges. Some will use it in "issues" courses for non-science majors and emphasize that aspect of the text. Others will use it for introductory plant biology or agriculture/horticulture courses.

This second edition is a joint publication venture between the ASPB Education Foun-

dation and Jones and Bartlett Publishers. The book is available to ASPB members at the discounted price of \$70 and can be ordered at www.plantbiotech.jbpub.com. More information on the content of the text is at this web site. Order directly from the web site to get the ASPB discount. The 550-page text is published in full color, and all illustrations will be at the ASPB web site for downloading and use in PowerPoint presentations.

The authors are now engaged in a campaign to raise the necessary funds to distribute 1,000 free copies of the book to college teachers in developing countries. They will be working with the ASPB International Committee to identify recipients. The authors will also be working with foundations, international organizations, and individuals to raise the \$80,000 needed for this project. People interested in contributing to this effort can contact Maarten Chrispeels at mchrispeels@ucsd.edu or David Sadava at dsadava@jsd.claremont.edu. This activity will be organized through the San Diego Center for Molecular Agriculture. 

ASPB Honored with Standard of Excellence Award by Web Marketing Association

The American Society of Plant Biologists is pleased to announce that the Web Marketing Association, Inc. (WMA), an organization devoted to recognizing excellence in corporate and nonprofit web sites worldwide, has awarded it with the industry's Standard of Excellence 2002 Web Award for the ASPB Get-A-Member Campaign created by membership and marketing manager Kelley Noone and implemented by webmaster Wendy Sahli.

Welcome Newest Members for 2002!

The Membership Committee is pleased to welcome the following individuals as first-time members of ASPB. Please e-mail Kelley Noone at knoone@aspb.org if your name was left out or if you have any questions.

Eric D. Aasen	Atle Magnar M. Bones	Jason A. Corwin	Weihua Fan	Brian J. Henson	Andrew J. Kamadulski
Dolores Abarca	Arale Bonshtein	Poalo Costantino	Feng Fang	Karina Hernandez	Jiman Kang
Haggag Abdel-Mageed	Patricia Bordallo	Sarah Covert	Ana L.N. Ferreira	Sonia Herrero	Jyoti Kapila
Luc Adam	Tina L. Botwright	Anthea N. Craighead	Fabio Fiorani	Gregory K. Hess	Fatma Kaplan
Steven W. Adamson	Sammy Boussiba	Joanna L. Cregan	Samuel P. Fletcher	Helke Hillebrand	Loannis Karafyllidis
Jennifer L. Agnew	Siobhan Bout	John Cupp	Wilfried Foadey	Jane E. Hodson	Kavita V. Karighattam
Shaheen Ahmed	Mondher Bouzayen	Daniel A. Cushing	Irina R. Fomina	Diane Hohorst	Ross Katkowski
Sharif U. Ahmed	Sally Box	Benyuan Dang	Joseph R. Fontana	Seho Hong	Gordon Kauffman
Zerekbay Alikulov	Adam R. Boyce	T. Danilova	Markus Frank	Tomoaki Horie	David Kehoe
Ali H. Al-Lawati	Jeff Bray	Kathleen J. Danna	Valerie Frankard	Gyorgy Horvath	Thomas Keller
Vibeke A. Alm	Kathryn R. Brown	Jean Danyluk	Mary Fryczynski	Kerry Hosmer	Kyle C. Kenyon
Thamir S. Al-Niemi	Bretislav Brzobohaty	Jerry Davison	Ru-Huei Fu	Mohammad Khajeh	Michael R. Kerns
Duane Alphs	Aubry Brzozowski	Irene S. Day	Xiangdong Fu	Hosseini	Junaid A. Khan
Magnus Alsterfjord	Paul Budworth	Nancy V J De Bakker	Seizo Fujikawa	John A. Howard	Wajahatullah Khan
Ricardo Amador	Stephen Y. Bukulu	Leyma Perez De Haro	Robert Gaeta	Arlene Howe	Shingo Kikuchi
Gennady M. Ananyev	Ryan N. Burnette	Jack P C De Wit	Johnway Gao	Christopher Howe	Byung-Dong Kim
Raphael Anguenot	James R.Ketudat Cairns	Bettina E. Deavours	Weifan Gao	Tsai-Hung Hsieh	Han Suk Kim
Valarmathi Anoop	Rico A. Caldo	Amanda J. Deering	Nigel E. Gapper	Jamie S. Hubert	Ho Bang Kim
M. Anuradha	Roberta Capp	Nima Dejbod	Ernesto Garcia	David R. Huff	Hye-Ran Kim
Sarah Archer-Evans	Luis Cardenas	Gaston A. Delard	Michele B. Garrett	Alisa Huffaker	Heyjin Kim
Annika Arkell	Robert E. Carey	Carla Delatorre	Joshua M. Gendron	William V. Hugie	Jitae Kim
Bulak Arpat	Sara Carpenter	Nikki A. Delk	Acosta-garcia Gerardo	Oscar P. Hurtado-	Jungmook Kim
Maria P. Arrieta-Montiel	Jimena Carrillo-Tripp	Fan Deng	Antonius Gerats	Gonzales	Keun Pill Kim
Nandi Ashis	Leonardo Casano	Sheri Denslow	Daniel R. Gestaut	Shazia Husain	Soo Jin Kim
Eduardo Ayala	Elda Castro	Matthew D. Denton	Lisa Giacomelli	Dang H. Huynh	Sung-Hyun Kim
Nathan Bach	John Cawly	David O. Deppong	Laura U. Gilliland	Byoung-Ho Hwang	Sung-Jin Kim
Murray R. Badger	Yan-ping Cen	Benjamin P. DeRidder	Rebecca M. Gintz	Hau-Hsuan Hwang	YongSig Kim
Fang Bai	Chi S. Chae	David D'Haese	Mandar R. Godge	Moogak Hwang	Bryan Kindiger
Bryan A. Bailey	Tarakanath Chakravarthy	Anusha P. Dias	S. Mark Goodwin	Sangjoon Hwang	Paul W. King
Danielle DN Baker	Carol Wai Man Chan	Renata F. Ditt	Rebecca Gorton	Daisuke Igarashi	Elizabeth A. Kinsman
Dheepa Balasubramanian	Ka Yan Chilann Chan	Sarah Doege	Michelle Graham	Hilal Ilarslan	Susan M Koehler
Miguel A. Ballicora	Sarita Chaudhary	Yunzhou Dong	Bernard Grausem	Robert A. Ingle	Hanae Koiwai
Yves Balmer	Shubho Chaudhuri	Bryon S. Donohoe	Douglas Grubb	Masahiro Inouhe	Richard F. Kopp
Roobina I. Baloch	Daphne Chen	Marcelo C. Dornelas	Joe E. Guest	M.C.M. Iqbal	Erwin Krauskopf
Gloria Banuelos	Fang Chen	Kate A. Dreher	Jennet O. Gummadova	Hironori Ito	Anna Kressel
Adam W. Barb	Hao Chen	Zeji Du	Arunika N. Gunawardena	Takanori Ito	Julie R. Krosting
Nicholas J. Bate	Lingjing Chen	Dana A. Dudle	Bhadra M. Guneskera	Emma M. Jack	Adelheid R. Kuehnle
Ivan R. Baxter	Sixue Chen	Ivan Martinez Duncker	Manju Gupta	Steven E. Jacobsen	Anshuman Kumar
Kellis M. Bayless	Xi Chen	Francis M. Dunning	Neal I. Gutterson	Richard Jagger	Kavitha T. Kuppusamy
Jaime T. Becnel	Z. Jeffrey Chen	Suntara Eakanunkul	Sun-Hwa Ha	Flordeliza B. Javier	Monika Kuzma
Joseph A. Bedell	Zhongying Chen	Marcus Ebneith	Brian Haas	Keyttisha Jefferson	Emanuel Kwahk
Vadim Beilinson	Xiaofei Cheng	Tricia Echtenkamp	Pierre Haldimann	Byeong-wook Jeon	Prakash Lakshmanan
Benjamin L. Bellows	Satya P. Chintamanani	Lori G. Eckhardt	Gerald Hall	Sun Yong Jeong	Praveen Lal
Catie L. Bellus	Chi-Chou Chiu	Andrew Edmondson	Stephen J. Halperin	Jeoung-Mee Jeoung	Steven R. Larson
Meriem Benchabane	Nam-Young Cho	Lee Edwards	Shuyou Han	Guanmin (Kathy) Jiang	Andrew D. Leakey
Tanya Z. Berardini	Sung Ki Cho	Edward Eisenstein	David J. Hannapel	Yong Jiang	Olivier Leblanc
Daniel R. Bergey	Kyu Ha Choi	Sathya Elavarthi	Linda I. Hannick	Hua Jin	Anthony Hok Leng Lee
Eveline Bergmueller	Yang Do Choi	James M. Elder	Ikuko Hara-Nishimura	Jingbo Jin	Byeong-ha Lee
David R. Bevan	Yu Jin Choi	Sami M. Elrakshy	April D. Harper	Qiaoling Jin	Garam Lee
Sumana Bhat	Kang Chong	Akira Endo	Judith E. Harrington	Yong-Moon Jin	Han Yong Lee
Saikat Bhattacharjee	Insik Chung	Gabriella Endre	Barbara L. Hass	Gregory A. Johnson	Hyoungeok Lee
Yvonne M. Bishop	Piljoong Chung	Linda C. Enns	Shingo Hata	Keith Jolliff	Jae-Hoon Lee
Nicole P. Bisson	Jeffrey B. Church	Mustafa E. Ercetin	Kenichiro Hayashi	Chad V. Jordan	Jent-turn Lee
Ronald H. Blackmon	Steven J. Clough	Larry Erickson	Celine A. Hayden	P.C. Josekutty	Jeong Hee Lee
Kristopher A. Blee	Albert Concepcion	Merici A. Evans	Alec J. Hayes	Shivanjali Joshi	Jungho Lee
Robert Bloksberg-Fireovid	Heather Conn	Kellye A. Eversole	Ping He	JiHyung Jun	Simyung Lee
Sara E. Blumer	J Peter Coppinger	Gbenga Famuyiwa	Silvia Heck	Grace I. Jurkowski	Soo In Lee
Adam J. Bogdanove	Gabriel Cornic	Jilian Fan	Marc A. Heim	Shawn Kaeppler	Ung Lee
Bhaskar R. Bondada	Will Corum	LiuMin Fan	George F. Heine	Erica N. Kalb	Oranuch Leelaporn

Guenther El Leitz	Anthony G. Miller	Helena Porta	Evgeni Selkov	Dingzhong Tang	Huanca-mamani Wilson
Paul G. Levesque	Naoto Mitsuhashi	Amy Porter	Gopalan Selvaraj	Guiliang Tang	Kristy J. Wilson
David H. Lewis	Toshiaki Mitsui	Matthew C. Posewitz	Charles W. Senior	Scott D. Tarpinian	Astrid Wingler
Chuanyou Li	Deepti R. Mohamalawari	Geert Potters	Mervi M. Seppanen	Tharathorn Teerakathiti	Markus Wirtz
Jianxiong Li	Jamie L. Monfils	Nicholas John Price	Guido Sessa	Masayoshi Teraishi	Mitchell L. Wise
Ming Li	Akio Morita	Yadong Qi	Jixiu Shan	Mika Teranishi	Lynette Wong
Qinglin Li	Marc R. Morra	Wenping Qiu	Libo Shan	Nadia Terzaghi	Tara Wood
Songtao Li	Stephen M. Mount	Yin-Long Qiu	Neelam Sharma	Mesfin Tesfaye	Tinsay Woresta
Xiaobo Li	Mahmoud F.M. Moustafa	Natasha M. Rabinowitz	Vijay K. Sharma	Karen J. Thompson	Cessandra Wright
Xin Li	Penny Treadgill Mrabet	Tine Raeymaekers	Sandra E. Sharry	Shiv Bahadur Tiwari	Cheng-Chiang Wu
Xu Li	Rasika G. Mudalige	Suresh Babu Raman	Jonathan M. Shaver	Jennifer To	Madeline Wu
Yangrui Li	Fujio Mukumoto	Senthil Ramu	Wei Shen	Dennis Javier Tobias	Yongzhong Wu
Yujing Li	Mrinalini Muralidharan	Annamaria Ranieri	Lahong Sheng	Manuel Tome	Yunsheng Wu
Chia Chen Liang	Robert Murphy	Gururaj A. Rao	Lan-Xin Shi	Brian Tomsett	James X. Xia
Stein Erik Lid	Michael G. Murray	Uwe Rascher	Lifang Shi	Paola Tosi	Yiji Xia
Juan Lin	Toshifumi Nagata	Harish Ratnayaka	Hiroshi Shiba	Douglas Tremblay	Ping Xiang
Shao-kai Lin	Savitha Narendra	Catherine J. Rayon	Taeko Shibaya	Debjani Tripathy	Fangming Xiao
Tatiana K. Litinskaya	Florence Negre	Csudae P. Reddy	Sanuja Shihab	Fei-Yi Tsai	DeYu Xie
Fei Yen Liu	Guy A. Ngo	Jaime E. Redick	Sung-bong Shin	Zheng-chia Tsai	Zhen Xie
Fenglong Liu	Bay Duy Nguyen	Julia Redman	Renuka N. Shivaji	Ed W.T. Tsang	Bingfang Xu
Haizhen Liu	Jorge Nieto Sotelo	Janet N. Reed	Azeddine Si-Ammour	Jutta A. Tuerck	Changcheng Xu
Jinyuan Liu	Seung-Jae Noh	Rhonda D. Reed	Carolyn D. Silflow	William S. Underwood	Fangxiu Xu
Liyun Liu	Silas Obukosia	Sarah C. Reed	Bir Singh	Yuichi Uno	Qilong Xu
Min Liu	Dong-Ha Oh	Aaorn Reeves	Surendra Singh	Srinivasa Rao Uppalapati	Zengfu Xu
Yi Liu	Kazuhiro Ohtsu	Andreas Reindl	Timothy W. Sipe	Pedro Uribe	Song Xue
Zhiyong Liu	Masanori Okamoto	Didier Reinhardt	Joel Sirois	Smirnov Valeriy	Roopa Devi Yalamanchili
Donald Livingstone	Andrew C. Okoboi	Andreas Renz	Eugenia A. Skirta	Nathalie Van Bruaene	Ying Yan
Nissa L. Lohrmann	Fidelma A. O'Leary	Ernest F. Retzel	Ann J. Slade	Emily L. Van de Mortel	Dennis Yang
Min Lu	Yoshitaka Omura	Antonio Ricci	Jennifer D. Sloppy	Lusi Van Heerwaarden	Guojun Yang
Shanfa Lu	Emeka Onele	Elena A. Rice	Carol L. Smedley	Cecilia Vasquez-Robinet	Kwang Yeol Yang
Hon Kei Lum	Akemi Ono	Margaret S. Rice	Roger K. Smith, Jr.	Sujatha Venkataramani	Shu-jun Yang
Weide Luo	Rodjana Opassiri	Dean E. Riechers	Moon-Tae Song	Ramarao SKV Vepachedu	Yue Yang
Eric M. Luther	Maria I. Ordiz	Jean L. Roberts	Jordan B. Sottosanto	Jon Veramendi	Xinfu Ye
Kelly M. Major	Godson O. Osuji	Louis A. Roberts	Giuseppe Spano	Wim Verelst	Ching-Hui Yeh
Jafar Akifoglu	Donal M. O'Sullivan	Adriana PM Rodrigues	Elena Bray Speth	Claudia E. Vergara	Nari Yi
Mammadov	Harald H. Ottenhof	Edmundo M. Rodriguez	Kimberly D. Spradling	Eliza Vermillion	Motohito Yoneda
Abul Mandal	Lotta Otterhag	Kyung Hee Roh	Nathan M. Springer	Nat Vettakkorumakankav	Cheolmin Yoo
Muthusamy Manoharan	Robyn L. Overall	Slava Rom	Boryana Stamova	Kathleen M. Vickers	Masakazu Yoshida
Long Mao	Yoshihiro Ozeki	Hector Roman	Nicholas R. Stephens	Jean-Philippe Vielle-	Keiko Yoshioka
Lyza G. Maron	Senthilkumar	Giorgia Romano	Jason D. Sterling	Calzada	Allison L. Young
Juan C. Martinez-Alvarez	Padmanaban	Maria Teresa Romero-	Stephen C. Stout	Todd Vision	Mehmet Cetin Yuceer
Giselle Martinez-Noel	Sophie Pagny	Romero	Ian H. Street	Lara M. Voll	Hee Jung Yuck
Nompumelelo H.	Michael G. Palmgren	Elke G. Rosche	Saravanan R.	Takuji Wada	Song Joong Yun
Masubelele	Anand Pandravada	Joanne He Ross	Subramanian	Abdul Wahid	Donna Ramaecker Zahn
Yehia M. Mater	Eunyoung Park	Veronica Lira Ruan	Shuichi Sugiyama	Aiming Wang	Janice M. Zale
Kyoko Matsui	Jong-A Park	Andrea Rudella	Suchada Sukrong	Hao Wang	Maria Eugenia Zanetti
Mikiko Matsui	Joon-Hyun Park	Christy E. Ruggiero	Jonathan S. Sullivan	Huai Wang	Hua Zhang
Ryo Matsushima	Joonho Park	David Sadava	Haiguo Sun	Kit NG Wang	Hua Zhang
Matthew D. Mattozzi	Misoon Park	Claude M. Saint-jore	Tongguo Sun	Liangjiang Wang	Zhong-Lin Zhang
Patricia Mauvais	Brandon Parker	Aya Sakamoto	Yan Sun	Xinkun Wang	Suling Zhao
Andrew S. Mazurkie	Rachel Parsons	Hidehiro Sakurai	Dong Yul Sung	John M. Ward	XueChu Zhao
Kayla D. McCartor	Shalaka S. Patel	Narasimha C. Samboju	Yuying Suo	Lena Warren	Huanquan Zheng
Thomas J. McCoy	Marquis Patrick	Vladimir Samoylov	Amanda M. Surette	Randall F. Warren	Zhiliang Zheng
Lisa McDonnell	Wojtek P. Pawlowski	Javier Jimenez Sampedro	Marci A. Surpin	Haruhiko Washida	Hongzhi Zhi
John McHugh	Gregory L. Pearce	Sobeida Sanchez-Nieto	Endang Susilawati	Etsuko Watanabe	Jingping Zhong
Russell L. McInnes	Venkatramana Pegadaraju	Thomas W. Sasek	Masaharu Suzuki	Stephen L. Weaver	Suping Zhou
Lauren M. McIntyre	Claude Penel	Scott E. Sattler	Debbie J. Swarthout	Andreas Weber	Yihua Zhou
Sergio Medina-Godoy	Liangcai Peng	Beth Savidge	Jodi A. Swidzinski	Gerd Weber	Hongyan Zhu
Metha Meetam	Miguel A. Perez-Amador	Maria Teresa Scarano	Million Tadege	Jiangqi Wen	Thomas Ziegelhoffer
Michael M. Melzer	Christine E. Pfund	Pamela Scheiber	Taku Takahashi	Peter Wenzl	Helge Zieler
Tesfaye D. Mengiste	Lynn J. Pillitteri	Peter Scherp	Bao-Cai Tan	Carrie L. Whitcher	Marcela Zozaya
Matthew Merrill	J. Chris Pires	Mark Aurel Schottler	Osamu Tanahashi	Derek W.R. White	
Nae-Hwey Miao	Nicholas D. Polge	Walter H. Schroeder	Suparna Taneja-	Frank F. White	
Dan Milbourne	Georgina Ponce-Romero	Jose M. Segui-Simarro	Bageshwar	Soo Jin Wi	

The HighWire Press Portal: Search and Track Your Favorite Journals Easily

The new HighWire Press portal (<http://highwire.stanford.edu/>) allows for instant search of abstracts from all 4,500 journals in Medline, plus the full text of more than 330 journals hosted by Stanford's HighWire Press, including *Plant Physiology* and *The Plant Cell*. The portal lets registered users (registration is free and takes less than a minute) designate any HighWire-hosted titles as "favorite journals" and then allows for other special capabilities for those chosen, full-text "favorites."

Most lab personnel typically monitor a few dozen journals, and individuals take responsibility for knowing what is new and important in just a handful of those journals. The portal "favorites" feature helps researchers narrow their focus and allows them to search and monitor new content in journals designated as their favorites.

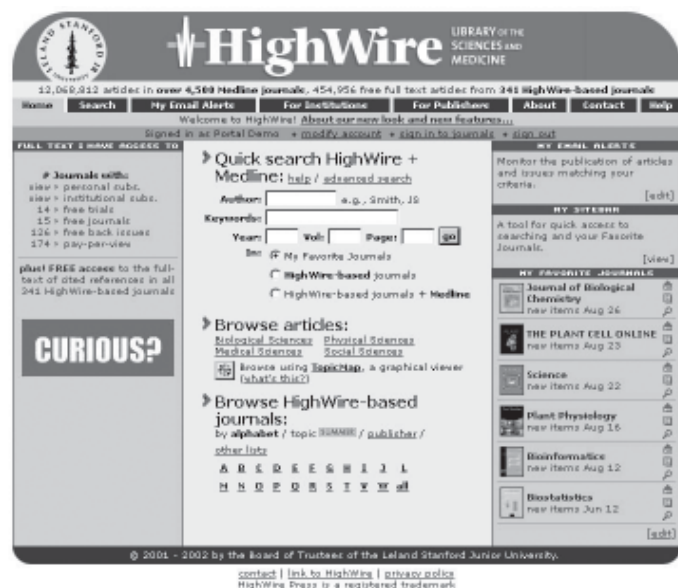
Portal Favorites Features

Search Scope. Click a button on any search form and instantly restrict the scope of a search to include only your favorite journals. Note the radio button labeled "My Favorite Journals" in the center column of the HighWire homepage image below.

Search-Result Highlighting. In any search result display—whether limited to favorite journals or not—the portal will highlight citations from favorite journals by showing the journal cover over a purple bar (see the the image to the right, which shows citations from a search on "cellulose" with the recent *Plant Cell* articles highlighted).

Monitor New Content.

The HighWire homepage identifies what the most current content is in each of the designated favorite journals and lists them in order of most recent content date. It also provides quick links to the newest content, the journal homepage, the current-issue table of contents page, and the search page for each of the designated favorite journals. Coming soon, the portal will have a new alerting feature allowing you to restrict CiteTrack alerts to include only your favorite journals.



If you have already registered, you will need to sign in.

- Step 2: After registering or signing in, first-time users will see a "What is this?" link under the heading My Favorite Journals. Click on "What is this?" to be taken to a short summary of the My Favorite Journals feature, including the link "Create/Modify My Favorite Journals Preferences."

- Step 3: Click on the "Create/Modify My Favorite Journals Preferences" link and checkmark which journals are your favorites. After making your selections and clicking the submit button, you are returned to the portal homepage, and the Favorite Journals features will be active, with a new [edit] link at the bottom of your selected journals. You can easily change your Favorite Journals list just by clicking on [edit].

Getting Started

To put these Favorite Journals features to work for you, you must tell the portal which journals are your favorites.

- Step 1: If you haven't already, you will need to register by clicking on the register link on the HighWire homepage.



The Bioethics Imperative VII

“Mokita”: The truth we all know and **agree** not to talk about. *Papua New Guinea*.

Scenario: A highly accomplished graduate, “X,” of a major research institution joins a new field seeking to expand their expertise and therefore become more marketable. You are delighted to have them: X wins a three-year NIH award to work in your lab. X starts off well, and you set X to work with a senior postdoc. Later, the senior postdoc publishes the paper without naming X as an author and misspells X’s name so as to be unrecognizable in the acknowledgments. You did not warn X that they would not be an author and do not catch the error in the acknowledgments. X’s output flags. Diagnosis of a major illness engendered by overwork ensues. You verbally encourage X to rest, but simultaneously admonish X to produce results. After these exchanges X does even worse. X fails to publish their postdoctoral work and moves on to

another city in which they become a trapped spouse, unable to find a job that suits their talent.

What could you have done to be a better, ethical mentor?

One aspect of scientific integrity (see Bioethics Imperative VI in the May/June 2002 issue of the *ASPB News*) that we are ill-prepared to shoulder is ethical mentoring. We are trained at the bench and once we succeed there, we are whisked away to a land of grant writing, department/industrial/governmental politics, committee meetings, teaching, and, if lucky, the running of a lab of eager, bright, goal-oriented people. We are not taught to deal with the human problems of running a lab. Compounding the problem, scientists as a group are not known for their people skills.

Ethical mentoring entails establishing your lab policy toward the following issues and sharing it with prospective lab members. If you are thoughtful and honest in crafting these rules, sharing them in advance allows the person to see who you are and to decide if they want to buy into your ethical system.

Policies to share are

- expectations of interpersonal conduct between you and between all personnel
- authorship: who gets it and how order of author decisions are made
- output expectations, including how many publications are expected, equipment sharing, and what hours you expect to see that person in the lab
- confidentiality with intellectual property (data and ideas) from your lab and from other labs
- policies for copyright and patents issuing from your lab
- what you do to resolve conflict in the lab.

Consider posting your policies on your web site or in an e-mail or a letter to prospective students so that you do not overlook these important ethical facets of being a mentor.

To be continued . . .



Dina Mandoli

University of Washington, Seattle
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ASPB now accepts checks over the web.

It is simple and secure.

We will accept your university, company, or personal check.
Just go online, fill out the web form, and put the check information in the system.
We will receive your order of renewal as soon as you hit the submit button.

This is for checks drawn on U.S. banks in U.S. funds only.

If you have questions about this new service, please e-mail
Kelley Noone at knoone@aspb.org.



ASPB members share a common goal of promoting the growth, development, and outreach of plant biology as a pure and applied science. This column features some of the dedicated and innovative members of ASPB who believe that membership in our Society is crucial to the future of plant biology.

If you are interested in contributing to this feature, please contact Kelley Noone, ASPB membership and marketing manager, at knoone@aspb.org.



Name: Edgar P. Spalding

Title: Associate Professor

Place of work: Department of Botany,
University of Wisconsin

Research area: photomorphogenesis;
membrane transport and electro-
physiology

Member since: 1985

1. Has being a member of ASPB helped you in your career? If so, how?

If it hadn't been for the Society's annual meetings, I don't know where I would have learned how to explain my work and perspective to the leading experts in my field. If you can't explain yourself to them, you won't have much of a career.

2. Why has being a member of ASPB been important?

There is an important social aspect to science, a heavy dependence on reaching consensus through give-and-take between people. I think of ASPB as an institution that fosters that process

of calibrating our ideas and perspectives through its activities, awards, and journals. Without ASPB, our branch of plant biology would not be in its present advanced state.

3. Was anyone instrumental in getting you to join ASPB?

Nobody twisted my arm. I was aware of and interested in the Society as an undergrad, but I didn't join until a graduate fellowship reversed my cash flow situation.

4. What would you tell nonmembers to encourage them to join?

Not "would," but "do." I tailor my argument to the person I'm trying to persuade. To other professors I point out that ASPB lobbies to protect USDA from budget cuts. To new graduate students I'm more likely to say things like I said above. And then I mention the free beer at the mixer.

5. Have you gotten a job using ASPB job postings or through networking at the annual meeting?

I can't say there was a direct link between the two jobs I've had and the ASPB postings or meetings, but it is certainly fair to say that the experience I gained at the annual meetings helped me get those jobs. I don't like the word "networking" as a verb; it sounds a bit base.

6. Do you still read print journals? Where do you usually read them: work, home, library, in the car, on the bus?

Certainly not in the car! I often eat lunch at my desk, and that's a good time to read my paper copies of *The Plant Cell* and *Plant Physiology*.

7. What do you think is the next "big thing" in plant biology?

I have no idea what the next big thing will be, but I think the time is right for the drug discovery business to make more use of plant biology. Sometime soon a plant biologist will demonstrate that human disease models can be engineered in plants in a way that advantages high-throughput screening for new drugs. Maybe it will be me!

8. What person, living or dead, do you most admire?

There are a few people in that space I reserve for high admiration. The one I'll mention now is Jean Henri Fabre, the late-19th-century amateur entomologist who wrote about insect behavior in a humanistic, narrative fashion. He earned a meager living as a country schoolteacher in southern France while dedicating himself to studying the instincts and peculiar life histories of insects. When he left the school after 20 years of service, his salary and title were exactly the same as when he started! (I try to remember that fact every time something doesn't go my way.) He joyfully "retired" to a small,

stony, arid property that was his laboratory and continued writing marvelous accounts of his observations and experiments. He received little recognition until he was “discovered” late in life and called “the consummate observer” by Darwin. Fabre was very old and nearly blind before the government gave him an award and bought him a microscope.

9. What are you reading these days?

I'm nearly finished with *The Metaphysical Club*, by Louis Menand, but it's not been exactly easy. Before that, I thoroughly enjoyed McCullough's *John Adams*. Anyone who thinks they aren't getting what they deserve should read the story of John Adams's life.

10. Do you have any hobbies?

I have been an avid birder since childhood. Bird photography spun off from that. More recently, I have become hooked on butterflies, and now it's dragonflies, too. Shoeboxes full of slides and chigger bites are the result. My wife and I like to garden, and I play ice hockey in the winter.

11. What is your most treasured possession?

A dear friend of my grandfather bequeathed me some fairly rare, old bird books such as Wilson's *American Ornithology*. I'd say they are my most treasured possessions. The black dog in the picture did her best to get sent back to the pound by chewing on some, but I've forgiven her.

12. What things do you still have left to learn?

Patience is one.



PLANT GENETICS 2003

Mechanisms of Genetic Variation

October 22–26, 2003

Snowbird Resort & Conference Center • Snowbird, Utah

Chair: Venkatesan Sundaresan, University of California, Davis

Vice Chair: Rich Jorgensen, University of Arizona

<http://www.aspb.org/meetings/pg-2003/>

SCIENTIFIC PROGRAM

Keynote Lecture—Enrico Coen

Genomes I: Natural Variation and Natural Processes of Evolution

Maarten Koornneef (Wageningen)

Barbara Schaal (Washington U. – St. Louis)

Rod Wing (U. Arizona)

Genomes II: Speciation and Crop Domestication

Loren Rieseberg (Indiana U.)

John Doebley (U. Wisconsin)

Jonathan Wendel (Iowa State U.)

Chromosomes: Genetics of Chromosomal Inheritance

Daphne Preuss (U. Chicago)

Kelly Dawe (U. Georgia)

Paul Fransz (Wageningen)

Chromatin and Imprinting

Vicki Chandler (U. Arizona)

Eric Richards (Washington U. – St. Louis)

Steve Jacobsen (UCLA)

Control by Movement of RNA and Proteins

Herve Vaucheret (INRA)

David Jackson (Cold Spring Harbor)

Vicki Vance (U. South Carolina)

Plant Form and Function I: Developmental Genes

John Bowman (U. California, Davis)

Sarah Hake (PGEC)

Ueli Grossniklaus (U. Zurich)

Plant Form and Function II: Evolutionary Dynamics of Resistance Genes

Jeff Dangl (U. North Carolina)

Joy Bergelson (U. Chicago)

Tony Pryor (CSIRO)



Memories of Spain

In late June I spent several days traveling in Andalusia, in the south of Spain. I was amazed by the exquisite beauty of the mosque in Cordoba, and spent two days wandering awestruck through the fantastical palaces and gardens of the Alhambra. I spent hours strolling through the splendid gardens of the Royal Palace in Seville, truly some of the loveliest gardens I had ever seen. But there is one other thing that stands out in my memory, even amid all this splendor and despite the fact that it seemed to pass unnoticed by most other visitors to the region.

One day we left the walls of the Alhambra and turned away from the city for a run through a nearby state park in the foothills of the Sierra Nevada. We enjoyed lovely views down to the Alhambra, the pretty city of Granada, and the sweeping plains, or vega, stretched out below as far as the eye could see. Suddenly, I was stopped dead in my tracks by an astonishing sight: There in the scrubby growth off the trail in front of me was an enormous 12-foot-tall flowering Agave. I suppose it was all the more amazing because it was entirely unexpected, and although I am fa-

miliar with the Agave plant and immediately identified the flowering inflorescence for what it was, I had never before seen one in flower. The stalk was about 8 inches in diameter at the base and bore numerous branches full of yellowish-green buds.

The flowering spikes of many Agave species grow to heights of 10 to 20 feet, and some, like *Agave americana*, reportedly grow to more than 30 feet. Although most Agave are monocarpic and bloom only once in their lifetimes, it is perhaps not unusual to see numerous individuals in bloom in any given year in areas where the plants are abundant. They are native to the Americas, but are widely cultivated around the world and have evidently found a suitable habitat in southern Spain. Ancestors of the Agave growing in Andalusia were probably brought back from the New World by Columbus, Cortez, and other Spanish explorers throughout the 1500s. As we carried on our way through the following week, we saw dozens of these enormous flowering stalks in



the countryside between Granada and Seville; we saw them in the upper streets of the famous Albaicin neighborhood of Granada alongside white-washed buildings, on hillsides along the railway among the olive groves, and here and there on the road outside of Seville. One hillside above Granada was a veritable forest of towering

Agave flowers.

One need not live in the desert to enjoy these remarkable plants. The tiny *A. parviflora* (Little Princess Agave) grows about six to 12 inches high and makes a great houseplant. It has lovely dark green leaves with white fibers curling from the edges. If you give it a good home and exercise patience, one day it may produce a four- to six-foot-tall green flower spike with pale yellow flowers. My Little Princess enjoys pride of place on a pretty tiled plant stand—my own mini Spanish patio.

Nan Eckardt
neckardt@aspb.org

ANNOUNCEMENT

Seeking Online Mentors

Become an online mentor for MentorNet, the E-Mentoring Network for Women in Engineering and Science!

MentorNet's Presidential Award Winning One-on-One Mentoring Program pairs women engineering and science students with professionals working in corporations and government. During the school year, mentors and students communicate by e-mail about career goals, balancing work and life, course work, and many other topics. Mentors and students can also participate in MentorNet's E-Forum, an online discussion community.

Spend just 20 minutes per week and make a huge difference in a student's life. MentorNet encourages applications from both women and men with an educational or professional background in engineering or science and who are currently employed in private industry or government sectors.

To apply, go to www.MentorNet.net and click on "Community." Sign in as a new or returning member, and follow the link for the One-on-One Mentoring Program. The application deadline is October 31, 2002.



A Nobel Performance: Borlaug Shares His Insights, Encouragement, Commitment

The storybook journey of Norman Borlaug's life turned a page to ASPB at the annual meeting August 3. There in Denver he wrote yet another inspirational chapter for all who came to hear.

"Don't be satisfied with mediocrity. Don't waste the potential talent you inherited from your parents, grandparents, and great-grandparents! Reach for the stars. You will not reach the stars—but with some stardust in your hands, you will be surprised at what you can accomplish for yourself, your family, community, state, nation, and the well-being of all humankind," Borlaug exhorted.

Nobel Peace Prize laureate and father of the Green Revolution, Borlaug spoke with experience on star reaching and other astronomical feats in plant science. He is credited with saving more lives than any person who has ever lived.

Speaking on the prospects for agriculture in the 21st century, Borlaug said he believes the world has the technology—either available or well advanced in the research pipeline—to feed on a sustainable basis a population of 10 billion people.

"In crop improvement, we will need to apply both conventional breeding and biotechnology methodologies. The new tools of genetic engineering—if scientists are permitted to use them—can permit accelerated development of food crop varieties with greater tolerance to drought, heat, cold, and soil mineral toxicities; greater resistance to menacing insects and diseases; and higher nutritional quality levels. African governments should take care not to let these research products pass them by," Borlaug said.

He went on to note: "Of course, governments must prepare themselves with the necessary legislation and regulations to ensure proper testing of genetically modified crops. But they also must ensure that farmers have



Norman Borlaug

adequate access to the new technologies that come from these scientific developments.

"The more pertinent question today is whether farmers and ranchers will be permitted to use the new technology. While the affluent nations can certainly afford to adopt ultra low-risk positions, and pay more for food produced by the so-called "organic" methods, the one billion chronically undernourished people of the low-income, food-deficit nations cannot.

"It took some 10,000 years to expand food production to the current level of about 5 billion gross tons per year. Within 25–30 years, we will have to nearly double current production again. This cannot be done unless farmers across the world have access to current high-yielding crop production methods as well as new biotechnological breakthroughs that can increase the yields, dependability, and nutritional quality of our basic food crops."

Prior to Dr. Borlaug's Perspectives of Science Leaders Presentation, coordinated by the Committee on Public Affairs, ASPB President Vicki Chandler presented him with the ASPB Leadership in Science Public Service Award

in recognition of his contributions to science and humanity. The award is inscribed on a crystal clock.

"Dr. Borlaug serves as an admired and remarkable example for all of us. Dr. Borlaug, we're proud to have this opportunity to present you with the ASPB Leadership in Science Public Service Award," Chandler said in presenting the award.

As Chandler indicated during her introduction of Borlaug, he has followed his own advice on reaching for the stars and has been rewarded with uncommon results.

Born 88 years ago and schooled in a one-room schoolhouse in rural Iowa, Borlaug worked the family farm when his plow was horse-drawn and attaining increased yields meant farming more land.

Weight-training early-20th-century style—as in hefting a plow and other farm tools—helped build a strong and durable athlete. Borlaug's success in the sport of wrestling enabled him to attend the University of Minnesota, where he competed on the school team. At one meet, he had to wrestle at both a middleweight (his weight) class and the much larger heavyweight class, because his team was short-handed that meet. He won both matches. In various aspects of his life, he would continue to make a habit of taking on long odds and beating them.

Borlaug studied forestry and after graduation in 1937, worked for the U.S. Forest Service. He returned to graduate school at the University of Minnesota and took up the study of plant pathology, receiving his Ph.D. in 1942. He then worked as a microbiologist for E. I. DuPont de Nemours, until being released from his wartime service.

In 1944, he joined the Rockefeller Foundation's pioneering technical assistance program in Mexico, where he was research scientist in charge of wheat improvement. For

the next 16 years, he worked to solve a series of wheat production problems that were limiting wheat cultivation in Mexico and to help train a whole generation of young Mexico scientists.

His work in Mexico not only had a profound impact on his life and philosophy of agricultural research and development, but also on agricultural production, first in Mexico and later in many other parts of the world.

It was on the research stations and farmers' fields of Mexico that Borlaug developed successive generations of wheat varieties with broad and stable disease resistance, broad adaptation to growing conditions across many degrees of latitude, and exceedingly high yield potential. These wheats and improved crop management practices transformed agricultural production in Mexico during the 1940s and 1950s and later in Asia and Latin America, sparking what today is known as the "Green Revolution."

By the mid-1960s, Dr. Borlaug was taking his high-yielding "Mexican" wheats and crop management technology to Asia, first to Pakistan and India, and later to China, the Middle East, South America, North America, Australia—indeed anywhere that spring-habit wheats were grown. The impact has been spectacular. Over the past 40 years, wheat production in India has increased from 12 million to 76 million metric tons; in Pakistan, from 4.5 million to 21 million metric tons; and in the world, from 300 million to 650 million metric tons.

The high-yielding wheat varieties that Norman Borlaug and his many scientific colleagues developed are today grown on more than 75 million hectares (187 million acres) throughout the world and may well be responsible for saving tens of millions of people from starvation.

Dr. Borlaug has always considered himself to be a teacher, as well as a scientist. Today, several thousand agricultural scientists from more than 50 countries are proud to say they are Norman Borlaug's "students." Not only has he been a builder of individuals, but he also has been a builder of institutions dedicated to the service of humankind.

With the establishment of the International Maize and Wheat Improvement Center (CIMMYT) in Mexico in 1964–1966, Dr. Borlaug assumed leadership of the Wheat Program, a position he held until his "official" retirement in 1979, but where he has continued to serve as a senior consultant to this day. Since 1984, Dr. Borlaug has been the Distinguished Professor of International Agriculture at Texas A&M University, where he teaches one semester each year.


Since 1986, he has also been the President of the Sasakawa Africa Association and leader of the Sasakawa–Global 2000 agricultural program in sub-Saharan Africa (along with former U.S. President Jimmy Carter), which has worked with several million farmers in 15 countries of sub-Saharan Africa to increase food production.

Dr. Borlaug has been honored by scores of governments, universities, scientific associations, farmer groups, and civic associations. He holds 50 honorary doctorate degrees and belongs to the academies of science in 12 nations. He has served on two U.S. Presidential Commissions: World Hunger (1978–1979) and Science and Technology (1990–1992). He is also a member of the U.S. Wrestling Hall of Fame.

Dr. Borlaug was the driving force behind the establishment of the World Food Prize in 1985, which is awarded annually in recognition of outstanding human achievements in the fields of food production and nutrition, and still serves as chairman of its Council of Advisors.

Dr. Borlaug is married to the former Margaret Gibson. They have a daughter and a son and five grandchildren. He still works each day at either CIMMYT or Texas A&M University.

Dr. Borlaug's presentation was videotaped and will be available for viewing on the ASPB web site at www.aspb.org.

Committee on Public Affairs chair Peggy Lemaux noted her appreciation for the help of Borlaug's colleagues Page Morgan and Marla Binzel at Texas A&M. Morgan worked with Dan Cosgrove to invite Dr. Borlaug. Binzel greeted him on behalf of ASPB at the Dallas airport and accompanied him on his flight from Dallas to Denver. 

Images of Note

Images from Chrispeels & Sadava's 2nd edition of *Plants, Genes, and Crop Biotechnology* are now available online to ASPB members and nonmember course adopters.

<http://www.aspb.org/education/foundation/pgcb>

If you're a Society member, you'll log in using your member password, just like you do for all other members-only areas of the web site. Nonmember course adopters will be given a special password. Contact Robin Lempert at rlempert@aspb.org with questions.

Chandler Responds to Mandatory Labeling Bill Aimed at Modified Foods

H.R. 4814 introduced by Congressman Dennis Kucinich (D-OH) makes use of rigorous civil penalties and new authority for civil actions as part of a government-mandated food labeling requirement for genetically modified foods in the bill. ASPB President Vicki Chandler wrote to Congressman Henry Bonilla (D-TX) and other key members of Congress to address problems with the legislation and to advise against supporting the bill. She noted inconsistencies in the bill's provisions with broadly accepted science-based approaches to food labeling. Following is her letter:

July 19, 2002

The Honorable Henry Bonilla, Chairman
Subcommittee on Agriculture,
Rural Development
Food and Drug Administration and
Related Agencies
2362 Rayburn HOB
Washington, DC 20515

Dear Mr. Chairman:

The American Society of Plant Biologists (ASPB), a non-profit society representing nearly 6,000 plant scientists, urges you to oppose enactment of H.R. 4814, a bill which calls for non-science-based government mandates in labeling genetically engineered food.

As written, the bill would produce more confusion than knowledge for consumers. The bill contains unwarranted and severe civil penalties and authorizes otherwise baseless civil suits that could wreak havoc on American agriculture. By providing new authority for such civil suits and penalties that are not based on science, the bill could result in increased food costs for consumers here and abroad and diminish future national and world food supplies. For the more than 800

million people in the world now living in hunger, H.R. 4814 could have particularly severe consequences.

Government-mandated labeling, as provided in H.R. 4814, would not apply a scientifically sound and uniform standard that fully informs consumers of risks. A mandated label that indicates the process by which the food was prepared, but not the content, does not provide relevant information for consumers. H.R. 4814 would compromise, without a sound basis, the current uniform standards followed in labeling of foods.

Foods which are products of plant biotechnology already undergo far more extensive safety review than non-modified agricultural products. The U.S. Food and Drug Administration requires comprehensive safety tests on all modified foods entering the marketplace. However, there are other processes used in production of foods receiving far less rigorous safety review despite offering substantially higher risks than applications of biotechnology. For example, conventional breeding has produced a number of foods on the market that contain health threatening allergens for many people.

Agricultural production practices also include safety risks. For example, use of animal manure in the production of food crops relies on human management capabilities that are susceptible to error. Management errors in use of animal manure on food crops can result in serious food-borne illnesses among consumers. However, we are unaware of any bill seeking a consumer right to know if animal manure was used in the production of particular food products.

The National Academy of Sciences (NAS) in its 2000 report "Genetically Modified Pest-Protected Plants: Science and Regulation" found no distinction existing between the health and environmental risks posed by

plants genetically engineered through modern molecular techniques and those modified by conventional breeding practices.

The American Medical Association (AMA) has stated that there is no scientific justification for special labeling of genetically modified foods, as a class. Following are remarks by Secretary of U.S. Health and Human Services Tommy Thompson July 8 in Barcelona:

"I know that many of you are concerned with the issue of biotech foods. President Bush and I oppose mandatory labeling of food products that contain bio-engineered ingredients. Mandatory labeling would only frighten consumers and play into the hands of those who exploit fear rather than deal in fact.

"The Bush Administration believes that mandating the labeling of foods that contain bio-engineered ingredients will be costly both to industry and consumers. It will not provide any useful safety or health information to the public and might imply to some that bio-engineered ingredients are unsafe. That's simply not the case, so we oppose the effort to label such foods."

The policy of President Bush and his administration on food labeling, as explained above by Secretary Thompson, is also consistent with the policy that was followed by former President Clinton and his administration.

Please oppose H.R. 4814 as a separate bill or as offered in an amendment. Please let us know if we could provide any additional information.

Sincerely,



Vicki L. Chandler, Ph.D.

President, ASPB

Professor, University of Arizona

Bond, Mikulski Seek Additional \$10 Million for Plant Genome Research

As a result of the leadership of Senator Christopher Bond (R-MO) and Barbara Mikulski (D-MD), plant genome research program funding sponsored by the National Science Foundation would increase \$10 million above the NSF request to \$85 million for fiscal year 2003 in the Senate Appropriations Committee recommendation. Ranking member Bond and chair Mikulski succeeded in recommending this increase of more than 13 percent for plant genome research despite a vigorous campaign by some physical scientist representatives who are targeting biology funding as part of a broad-based campaign reaching many congressional offices.

Despite the Senate Appropriations Committee's recommended increase of 14.8 percent overall for the fiscal year 2003 Research and Related Activities account of the National Science Foundation, the Biological Sciences directorate would receive by far the lowest increase of 3.4 percent.

The lower recommended increase for BIO


is primarily the result of a campaign by many physical scientists who have been seeking what they term "more balance" in federal funding of research. The "more balance" campaign involves some physical science societies, industry representatives, some physical scientist university administrators, and others. The campaign has misleadingly given many members of Congress the impression that non-biomedical life science research has been on a doubling track the same as for recent increases in NIH-sponsored biomedical research funding.

The House Appropriations Committee had not yet approved its fiscal year 2003 recommendation for NSF when an ASPB alert was sent (during the August recess of Congress). ASPB Campus Contacts and all ASPB members in the United States were asked in that alert to contact their members of the House of Representatives to urge members of the House Appropriations Committee, particularly members of the House Appropriations

Subcommittee on VA, HUD and Independent Agencies, to address the Biological Sciences directorate equally with the other NSF science directorate increases.


A sample letter sent with the ASPB legislative alert appears on the facing page.

For a listing by state of fiscal year 2001 NSF Directorate for Biological Sciences funding, visit the NSF web page at <http://dellweb.bfa.nsf.gov/AwdLst2/default.asp>. The chart on that web page showing NSF biology support by state also offers the option of clicking on each state to get awards by institution.

There are far more physical scientists and engineers in the nation than there are non biomedical life scientists. A response to Congress from many ASPB members and other life scientists supported by NSF is needed to counter this aggressive campaign for science funding by many physical scientists. 

ASA-CSSA-SSSA Sustaining Earth Video Available

A 25-minute video, *Sustaining Earth and Its People: Translating Science into Practice*, has been released by the American Society of Agronomy, the Crop Science Society of America, and the Soil Science Society of America. The video provides a glimpse of the popular Plenary Sessions of the three societies' 2001 annual meetings, held last October in Charlotte, North Carolina. It highlights

the challenges facing agriculture and society in restoring balance among the competing forces of population, food production, energy and natural resource limitations, economic imbalance, and environmental degradation. It will soon be available for download from the USDA via a link on the societies' web sites: www.agronomy.org, www.crops.org, and www.soils.org. 

The Honorable (name of Congressman or Congresswoman)
U.S. House of Representatives
Washington, DC 20515

SAMPLE LETTER

Dear Congressman (name of Congressman):

As a scientist conducting research in fundamental biology, I appreciate the support you have given to the National Science Foundation (NSF), which includes the research Directorate for Biological Sciences.

For many years, biologists have urged members of Congress to support NSF, without singling out one particular research directorate. Unfortunately other science disciplines, particularly many physical scientists, have recently begun aggressively seeking research funding specifically for their own science directorates within NSF, even if it is at the expense of needed fundamental biology research.

This aggressive campaign by non-biologists could unfortunately have a withering effect on the funding increase recommended for research in fundamental biology. I am urgently requesting your help to specifically support the NSF Directorate for Biological Sciences.

The current fiscal year 2003 recommendation by the Senate Appropriations Committee (Senate Report 107-222 accompanying S. 2797) for the Directorate for Biological Sciences (based on percentage of increase) is nearly six times lower than the increase recommended for the NSF Directorate for Computer and Information Science and Engineering; nearly six times lower than the Directorate for Engineering; more than four times lower than the increase recommended for the Directorate for Mathematical and Physical Sciences; nearly four times lower than the increase recommended for the Directorate for Geosciences; and more than four times lower than the increase recommended for the Directorate for Social, Behavioral and Economic Sciences.

At the same time, the nation's capacity to conduct research in fundamental biology is affected by the loss of many young biologists to more mission-oriented biomedical research. A number of long-standing fundamental biology research disciplines essential to the nation face a prospect of extinction if the NSF Directorate for Biological Sciences is determined by Congress to be a lower priority for research.

For example, fundamental biology research in a number of areas related to whole organisms is attracting fewer scientists because of funding constrictions at the NSF Directorate for Biological Sciences. At the same time, retiring university-based scientists studying whole organisms face the prospect of being replaced by biologists who conduct more strongly funded biomedical research. Valuable knowledge gained in the areas of systematics, physiology, water relations, environmental stress, and other areas could be lost within just a few years as scientists retire and are not replaced, because of lack of funding for this research. Future discoveries providing novel ways to contribute to a cleaner environment; better protection of limited fresh water and other resources; and more effective responses to severe weather conditions and other environmental stresses affecting plants and other organisms could be lost along with NSF biology funding losses.

The House Appropriations Committee and Appropriations Subcommittee on VA, HUD and Independent Agencies (independent agencies including NSF) are expected to make their recommendations for fiscal year 2003 appropriations next month (possibly mid-September). Please urge members of the Appropriations Subcommittee on VA, HUD and Independent Agencies to support the NSF Directorate for Biological Sciences in the fiscal year 2003 appropriations bill and report that the subcommittee is drafting.

Your support of the NSF Directorate for Biological Sciences is needed to maintain and strengthen the talent pool of scientists studying fundamental biology in our state and nation. Thank you for your support of fundamental life sciences research in past years to better serve the life-related needs of all Americans.

Sincerely,

(your name)

Lemaux Newspaper Commentary Cites Paradox of Refusing Modified Foods

ASPB Committee on Public Affairs Chair Peggy Lemaux wrote a newspaper commentary published August 1, 2002, that showed how lack of knowledge of plant biotechnology is harmful to many of Zimbabwe's hungry people. The commentary was distributed by Knight Ridder/Tribune Information Services and published by the *Duluth News Tribune*. Earlier published commentaries on plant biotechnology distributed by Knight Ridder were written in recent months by ASPB members Alan McHughen and R. James Cook. Newspaper commentaries can be an effective medium for reaching local opinion leaders and others in the newspapers' distribution areas.

August 01, 2002

Commentary by PEGGY G. LEMAUX

Ignorance about bio-tech hurts world's hungry

Allergenicity—the potential to cause an allergic reaction—is probably the most difficult human food safety issue to predict. That unpredictability makes it virtually impossible to guarantee that foods, including the new genetically modified foods coming to the market, will be allergy-free.

The problem can cost seed and food companies hundreds of millions of dollars. But perhaps a more costly price is being paid by the world's hungry when these crops are discarded rather than being eaten.

The most striking case to date was the discovery in the fall of 2000 of corn products, like tacos and tortillas, contaminated with small amounts of StarLink corn. StarLink was a new genetically modified corn variety approved only for animal consumption because the corn's developer and government regula-

tors weren't sure whether the corn might cause food allergies in some people. People aren't born with food allergies; they become allergic after eating foods.

Like several other genetically modified crop varieties, StarLink contained a bacterial protein that is deadly to crop-eating caterpillars but is harmless to humans. Backyard gardeners have sprayed the bacteria, called Bt, on crops as an insecticide for decades without any known problems.

But the Bt protein in StarLink was modified so that it was digested more slowly in the gut of the pest, making it a more effective pesticide. This change also appeared to make the protein less digestible in humans, which happens to be a feature of some human food allergens. This delayed the EPA's approval of StarLink for human consumption, but they approved it for "animal feed-only."

After it became known that StarLink corn had contaminated human foods, several dozen people reported possible allergic reactions to StarLink-contaminated products. However, extensive testing of these individuals by the U.S. Centers for Disease Control and Prevention found no evidence that the allergic reactions were due to StarLink corn or that the causative foods contained StarLink.

Since long-term human exposure would be required for problems to develop with StarLink corn as an allergen, if indeed they ever did, the potential to cause allergic reactions now is very low. StarLink corn seed is no longer sold and its presence in the U.S. corn supply is diminishing.

One important lesson learned from this is that assuring complete segregation of large acreage crop varieties, like corn, soy, and wheat, is difficult. The company that developed StarLink and the regulatory authorities learned this costly lesson and thankfully it

occurred before any human consumers were actually subjected to health risks.

But the company was not the only one to pay a price. The same company that made StarLink corn engineered a variety of rice to be herbicide tolerant.

Expecting EPA approval, the company contracted with U.S. farmers to grow the rice. Five million pounds of the rice was eventually harvested. But regulatory approval was delayed and the harvested rice was dumped in a landfill rather than helping to feed what could have been large numbers of hungry people. The company did not want to incur any liabilities for human consumption of genetically modified varieties.

Similarly, despite a severe food shortage caused by drought, Zimbabwe recently rejected more than 10,000 tons of food-aid corn sent by the United States after it was found to contain traces of StarLink. It has since relented and will accept it in milled form, although government officials continue to express concern over genetically modified food aid, despite the plight of its 2 million hungry people.

It is impossible to imagine that any potential adverse consequences of eating corn containing traces of StarLink or rice engineered to tolerate herbicides would be even close to those resulting from not having enough food to eat.

Something is seriously wrong when this much grain must be dumped or refused rather than eaten at a time when so many people are so desperate for food!

Peggy G. Lemaux is a specialist in plant and microbiology at the University of California at Berkeley. She wrote this commentary for the Knight Ridder/Tribune Information Services.



Denver Roundup!

Education Activities at Plant Biology 2002

ASPBE Education Workshop: "K-12 Outreach"

ASPBE president Vicki Chandler presented an award to Wisconsin Fast Plants developer Paul Williams at the K-12 education workshop for his work and ideas on making plants a part of the K-12 curriculum. Paul took the opportunity during his address to tell a personal story of how he became involved in Wisconsin Fast Plants, one of the most successful K-12 outreach programs ever. He made a strong case that the most effective outreach programs (in terms of numbers of students impacted) involve helping teachers teach science better. He attributes the phenomenal success of the Fast Plants program to a couple of factors: ongoing dialogue with the client (in this case, teachers) for user-friendly product support and feedback, and his energetic partner, wife Coe. Perhaps the greatest contribution to the success of Paul's educational projects is the infectious passion he brings to his work and instills in others.

Patricia Suchian, from the Howard Hughes Medical Institute, described grants available for K-12 outreach in plant science (primarily the undergraduate program). Based on assessments by the undergraduate program and on national trends, program elements have varied a little over the nine years of program operation. The most recently awarded undergraduate grants support precollege and other outreach as well as activities that strengthen undergraduate education. More information on these and other programs is available at the HHMI web site (www.HHMI.org). The next undergraduate program competition is anticipated in 2004. Application for these grants can be made only after institutions receive invitations (issued in spring 2003).

Machi Dilworth, from NSF, summarized NSF strategies toward K-12 outreach. NSF

is continuing its commitment to the recommendations contained in the most recent science indicators report (<http://www.nsf.gov/sbe/srs/seind02/>). These include moving toward more inquiry-driven learning and deeper (rather than broader) understanding in U.S. K-12 science classrooms. As a result, NSF is placing increasing emphasis on the broader impact of research and integration of research and education. Standard research grants now must address and will be evaluated partly on these issues. **Research Experience for Teachers (RET)** and **Research Experiences for Undergraduates** supplements to Current NSF Awards (NSF 02-102 and NSF 01-121) provide an opportunity for NSF awardees to integrate teaching into their research. The Research Experiences for Undergraduate site awards are also available for proposals focusing solely on undergraduate participation in research.

In addition, NSF has a number of initiatives targeted specifically at K-12 outreach. Many of these can be accessed at the NSF Directorate for Education and Human Resources homepage (<http://www.ehr.nsf.gov/>). Of note, **NSF 02-042 (Graduate Teaching Fellows)** awards money to institutions to give fellowships to graduate students or advanced undergraduate students so that they can enhance K-12 science education. NSF and the U.S. Department of Education launched the new **Math and Science Partnership (MSP)** program in fiscal year 2002, making \$172.5 million available in an initial competition. A defining feature of the MSP program is that it is targeted at developing productive partnerships between school districts and institutes of higher education. Partnerships can also include others, such as state or tribal government agencies, science centers, museums, businesses, and community organizations.

Larry Griffing spoke on his work with the Texas A&M University Science Education



Carol Reiss, Lowry Stephenson, and Sheila Blackman


Leadership Program. This program is a "partnership between the Colleges of Science and Education to prepare science education specialists with expertise in the use of information technology to do, learn, teach, and assess science." The program utilizes center project teams to connect current science research to classroom practices. It is supported with a grant from NSF.

ASPBE Education Booth

This year, the ASPBE booth hosted five energetic and dedicated exhibitors highlighting their work in plant science education. Two exhibits were award winners: *Nature's Pharmacy: Fighting Bacterial Infections with a Seed* (G. Ju and J. Bonina, ECHO, 17391 Durrance Road, North Ft. Myers, FL; <http://www.echonet.org>) and *Using Topics in Plant Genetic Engineering to Develop Critical Thinking and Information Literacy Skills* (J. Harrington, S. Ward, and P. Byrne, Department of Soil and Crop Sciences, Colorado State University, Fort Collins). The latter project highlights an excellent web site on transgenic crops (<http://www.colostate.edu/programs/lifesciences/TransgenicCrops/>). This contains many resources, including a primer on plant biotechnology and links to resources that students can use to search for and critically appraise material on the risks and benefits of transgenic technology in agriculture.

Kenneth D. Nadler (Department of Plant Biology, Michigan State University) presented a demonstration of sample problems from his set of more than 200 problems for homework and examinations: *Computer-Individualized Problem Sets for Introductory Plant Physiology* (described in Artus and Nadler, *Plant Physiol.* **119**: 1177–1186, 1999).

Dr. Peter V. Sengbusch (University of Hamburg) demonstrated “Botany *online*,” a hypertextbook covering most major botanical topics. It is currently located at <http://www.biologie.uni-hamburg.de/b-online/>. The project contains texts, high-quality images, Chime scripts, and material from databases. It is now transferred to the LearningOnline Network with CAPA (LON-CAPA; <http://www.lon-capa.org/>) at Michigan State University and will become part of NSF’s National Science, Math, Engineering and Technology Education (SMETE) Digital Library. Peter’s intention is to continue Botany *online* as a free archive of scientific knowledge for all learners and teachers in the field of plant biology. He is particularly interested in new contributors and those who would like to update the existing material. He is concerned, in the long term, about the editorial functions and oversight of growth of Botany *online*. If anyone is interested in contributing to this project, please contact Peter at b-online@botanik.uni-hamburg.de.

Dr. Dennis Valenzano (University of Kansas, Medical Center), project director for the Digital Photobiology Compendium, demonstrated this online resource for teaching and learning photobiology. Dennis wishes to contact plant scientists interested in contributing subject modules to enlarge the existing compendium and also those interested in developing and overseeing a spin-off of the original compendium that deals specifically with plant science. Check out the digital photobiology web site (<http://classes.kumc.edu/grants/dpc/>) and contact Dennis (dvalenze@kumc.edu) for further information. 

ExploraVision High School Team Is in Plant Science

The second prize in the 2002 Toshiba/NSTA ExploraVision contest for grades 10–12 was awarded to a plant science project titled “Phytorejuvenators: The Next Generation of Phytoremediation.” The project is described by the students as follows: “Genetically engineered green plants will extract pollutants from soils, as well as undiscovered fossil fuels and gold and silver metals. Pollutants will be transformed into benign, useful substances; biodegradable materials will be generated from renewable sources.”


The team consisted of two 11th graders from Lake Braddock Secondary School located in Burke, Virginia. A photo of the two students appeared in the Style section of *The Washington Post* on June 15, 2002, after the students had presented their scientific display at the National Press Club in Washington, DC.

The girls were motivated to enter this contest by their chemistry teacher, Linda Townley. In a phone interview, Townley stated that one requirement of being in her AP (advanced placement) chemistry class is that the students enter a scientific contest, a technique she has used for 10 years. Townley provides a list of contests from which her students can choose.

In the *Post* article the girls, who describe themselves as “liberal arts types,” are quoted as saying, “Environmental science is an area we never thought we’d be interested in. It’s an area you don’t usually think about until you start learning about it.”

As stated on the ExploraVision web site, the competition is “for students of all interest, skill, and ability levels in grades K–12. Entrants must be United States or Canadian citizens or legal residents, living within the United States, U.S. territories, or Canada and enrolled full-time in a public, private, or home school. The purpose of the competition is to encourage students to combine their imaginations with the tools of science to create and explore a vision of a future technology.”

The student winners are rewarded for their efforts. The four first-place teams will each receive a U.S. EE Savings Bond worth \$10,000 at maturity. Second-place winners will receive a U.S. EE Series Bond worth \$5,000 at maturity. National finalist team members and their parents/guardians will travel to Washington, DC, in June for ExploraVision Awards Weekend, where they will be recognized for their outstanding achievement. Although they live in the Washington, DC, suburbs, Townley said the girls were thrilled to have a limo ride into town.

A list of all the winners can be found at <http://www.toshiba.com/tai/exploravision/>. Click on “2002 National Winners” or to go directly to “Phytorejuvenators: The Next Generation of Phytoremediation” at <http://dev.nsta.org/evwebs/1140/Homex.html>. 



Judith Croxdale

Judith Lee Gerow Croxdale of Madison, Wisconsin, died suddenly of a heart attack on June 14, 2002. Judy was born on August 27, 1941, and grew up in Modesto, California. She began work on a degree in English at the University of Colorado and then married Michael Croxdale in 1960 and had a son. Upon her divorce in 1966 she resumed her academic studies, this time in botany at the University of California at Berkeley. She got an A.B. and then a Ph.D. from Berkeley under Professor Donald Kaplan. Her first professional position was at Virginia State University, but in 1979 she was recruited to the University of Wisconsin–Madison. She rose through the ranks of assistant, associate, and full professor of botany.

Judy's research focused on plant morphology. In the 1970s she worked on morphogenesis in the fern *Davallia* and then on the formation of submerged leaves in *Salvinia*. In the 1990s she started an extensive investigation of pattern formation in leaves, especially the patterns that determine the spacing of stomata. The most recent work from her lab showed that genes that affect trichome development also affect stomatal patterning, indicating that these genes affect development in the epidermis more than simply affecting trichomes.



Judy was frequently invited by leading journals to write on pattern formation in plants. A fun part of her research was applying her expertise to pattern development under altered gravitational conditions. She was part of a team that was involved in perhaps the first crop produced in space when potato tubers were grown on the space shuttle.

Judy analyzed the structure of the tubers grown in space. Her research program attracted many visiting scientists and provided many opportunities for undergraduates to participate in her laboratory. She was also recognized for her general scholarship with an invitation in 1999 to become editor-in-chief of the *Journal of Plant Growth Regulation*. She taught courses in the principles of plant development, structural plant development, and plant microtechniques. Each fall she participated in a colloquium on teaching college biology, a course designed to help teaching assistants prepare for teaching.

Judy was very active in university service. Among the 20 committees that she served on at one time or another is the Faculty Awards Committee. In this role she nominated many of her colleagues and was very effective in presenting their accomplishments. At the university level she participated in a wide range of committees, including the Undergraduate Teaching Improvement Council Committee.

She was perhaps most active in college committees. As chair of the college curriculum committee, she guided the school through important reforms. She was active in groups such as Women in Science and Engineering and worked hard to encourage women graduate and undergraduate students to participate in the sciences. She was chair of the Midwest Section of ASPB in 1993–94.

Judy was a very independent, adventurous woman. Like many academics she spent a lot of time on her career, but she had many other interests as well. She was a pilot for a number of years. She had a particular love for contemporary and emergent art. She rode her bicycle as often as she could and advocated for the rights of cyclists. She was particularly committed to exercise and a healthy lifestyle—for several years teaching aerobics—making the circumstances of her death so surprising to those who knew her.

Judy is survived by her son Leyton and daughter-in-law Lisa of Seattle, and brother Michael Gerow and mother Winifred Liberini of Modesto. She was preceded in death by her father, Harold Gerow.

A celebration of Judy's life was held September 18, 2002, at the Botany Department, UW–Madison. A fund has been established to help support women beginning research careers, one of Judy's passions. Donations may be sent to "UWF/Croxdale Scholarship Fund," PO Box 8860, Madison, WI 53708. 🌿

Thomas D. Sharkey
University of Wisconsin–Madison

ASPB News publishes dates, titles, locations, and contact names and addresses for meetings, courses, seminars, and the like that are of interest to ASPB members. **Submit announcements via the Web at <http://www.aspb.org/calendar/addevent.cfm>.** Questions? Contact Donna Gordon at dgordon@aspb.org. You may also reach us at *ASPB News*, 15501 Monona Drive, Rockville, MD 20855-2768 USA. **Faxed transmissions are not accepted.**

2002

OCTOBER

October 20-22

V Argentine Symposium on Plant Biotechnology Buenos Aires, Argentina

Visit our web page at www.bioteconologiavegetal.com or consult us in Portuguese or English at ayuda@bioteconologiavegetal.com.

October 23-25

XI Reunion Latinoamericana De Fisiologia Vegetal

XXIV Reunion Argentina De Fisiologia Vegetal I Congreso Uruguayo De Fisiologia Vegetal Conrad Resort & Casino Punta del Este, Uruguay

For information on the meeting see <http://www.fvegetal.edu.uy>.

For information on the location see www.conrad.com.uy.

NOVEMBER

November 10-14

ASA-CSSA-SSSA Annual Meetings, Uniting Sciences Solutions for the Global Community Indianapolis, Indiana

For more information, view our web site or contact Keith Schlesinger, e-mail headquarters@agronomy.org <http://www.asa-cssa-sssa.org/anmeet/>.

November 13-15

Plant Species-Level Systematics: Patterns, Processes and New Applications Gorlaeus Laboratory, Leiden, The Netherlands

For information contact symposium2002@nhn.leidenuniv.nl or see web site <http://www.nationaalherbarium.nl/symposium2002/>.

November 18-21

Genomics on Target Sheraton Boston Hotel, Boston, Massachusetts

For more information, visit www.genomicsontarget.com.

November 24-29

Biotechnology Havana 2002: "Agro-Biotech in the New Millennium" Center for Genetic Engineering and Biotechnology Havana City, Cuba

For information contact call +53-7-2718008, +53-7-2718466, fax +53-7-331779, e-mail bioagro@cigb.edu.cu or see the web site <http://bioagro.cigb.edu.cu>.

DECEMBER

December 4-5

Discussion Meeting: Mechanisms Regulating Gene Flow in Flowering Plants The Royal Society, 6-9 Carlton House Terrace, London, United Kingdom, SW1Y 5AG

Contact Suzi White, telephone +44(0)22-7451-2581; e-mail discussion.meetings@royalsoc.ac.uk; <http://www.royalsoc.ac.uk/events>.

2003

JANUARY

January 8-12

2nd International Congress of Plant Physiology On Sustainable Plant Productivity Under Changing Environment New Delhi, India

Contact Dr. G. C. Srivastava, Secretary General (ICPP 2003), Division of Plant Physiology, Indian Agricultural Research Institute, New Delhi 110012, India; telephone +91-011-5782815/5788773/5740616, fax +91-011-5766420/5751719, e-mail girish_chand_srivastava@rediffmail.com, <http://www.ispponline.org>.

January 15-19

Frontiers of Plant Cell Biology: Signals and Pathways, the 22nd Symposium in Plant Biology Riverside Convention Center Riverside, California

Contact Kathy Barton; telephone 909-787-4588, e-mail kathryn.barton@ucr.edu; <http://www.cepceb.ucr.edu/news/news.htm#1>.

January 21-24

Introgression from Genetically Modified Plants into wild relatives and its consequences Amsterdam, Netherlands

Contact Hans den Nijs (e-mail nijs@science.uva.nl) and Detlef Bartsch

Future ASPB Annual Meeting Sites

2003: Honolulu, Hawaii

Saturday, July 26, through
Wednesday, July 30

2004: Orlando, Florida

Saturday, July 24, through
Wednesday, July 28

(bartsch@zalf.de); <http://www.science.uva.nl/research/ibed/Introgression/>.

January 26-31

Gordon Research Conference on Temperature Stress in Plants Ventura, California

Contact Kay Walker Simmons, USDA/ARS National Program Staff, Beltsville, Maryland; telephone 301-504-5560, e-mail kws@ars.usda.gov; <http://www.grc.org>.

MARCH

March 9-13

World Cotton Research Conference III Cape Town, South Africa

<http://www.cottonconference3.co.za>

APRIL

April 6-9

Phytochemistry and Biology of Lignans Conference Center Walberberg Cloister St. Albert, Rheindorfer Burgweg 39, D-53332 Bornheim-Walberberg, Germany

Contact Professor Dr. Maike Petersen, Institut für Pharmazeutische Biologie, Philipps-Universität Marburg, Deutschhausstr. 17A, D-35037 Marburg, Germany. Telephone 49-0-6421-2825821, fax 49-0-6421-2825828, e-mail petersen@mail.uni-marburg.de.

April 10-16

Keystone Symposia "Plant Biology: Functions and Control of Cell Death" Snowbird Resort, Utah USA

info@keystonesymposia.org; telephone 800-253-0685 or 970-262-1230; fax 970-262-1525; <http://www.keystonesymposia.org>.

MAY**May 18–22****Third International Symposium on
Molecular Breeding of Forage and Turf
Dallas, Texas and Ardmore, Oklahoma**

For more information, visit our web site or
contact us at mbft2003@noble.org;
<http://www.noble.org/mbft2003>.

May 25–29**Plants and Microbe Adaptations to Cold
Quebec City, Canada**

For more information on the meeting visit the
web site. You can also contact Dr. Annick
Bertrand, Agriculture and Agri-Food Canada,
2560 Hochelaga Blvd., Sainte-Foy, Quebec,
Canada, G1V 2J3, e-mail bertranda@em.agr.ca;
<http://www.pmac2003.org>.

May 25–29**Plant and Microbe Adaptation to Cold
Palace Royal Hotel, Quebec City, Canada**

Dr. Annick Bertrand bertranda@agr.gc.ca;
<http://www.pmac2003.org>.

JUNE**June 2–6****Fourth International Symposium on
Adventitious Roots
Savannah, GA, USA**

For more information please contact Barry
Goldfarb; e-mail barry_goldfarb@ncsu.edu.

June 5–8**Transposition, Recombination and
Application to Plant Genomics
Scheman Continuing Education Building,
Iowa State University, Ames**

Advance registration date: May 5, 2003.

Deadline abstracts: April 4, 2003.

Deadline for travel grants: April 4, 2003.

Contact Gulshan Singh; e-mail
pbmb@iastate.edu; <http://www.bb.iastate.edu/~gfst/phomepg.html>.

June 7–12**Tree Biotechnology 2003, Umeå Plant Science
Center, SLU
Umeå, Sweden**

For more information please contact Ulrika
Hjelm; e-mail ulrika.hjelm@genfys.slu.se;
<http://www.treebiotech2003.norrnod.se>.

June 16–21**7th International Congress of Plant
Molecular Biology
Palau de Congressos de Barcelona**

<http://www.ispmb2003.com>

AUGUST**August 3–8****The 36th Meeting of the Brazilian
Phytopathological Society
Uberlândia, Minas Gerais, Brazil**

For additional information, please, contact Mr.
Fabricio Rodrigues, Department of Plant
Pathology, University of Florida, Gainesville, USA;
telephone 352-392-6902; far@scientist.com;
<http://www.36cbf.iciag.ufu.br>.

August 9–13**The Annual Meeting of the American
Phytopathological Society (APS)
Charlotte, North Carolina**

For information, contact Kathy Aro; telephone
651-454-7250, e-mail karo@scisoc.org;
<http://www.apsnet.org>.

August 17–23**Fourth International Symbiosis Congress
Halifax, Nova Scotia**

Organizers: Douglas Zook and David Richardson
(david.Richardson@stmarys.ca).
For more information visit our web site at
<http://people.bu.edu/dzook/>.

August 23–26**SEB Symposium 2003
Membrane and Protein Trafficking in Plants
Glasgow University**

telephone +44(0)20-7439-8732; fax: +44(0)20-
7287-4786; e-mail c.trimmer@sebiology.org;
<http://www.sebiology.org>.

OCTOBER**October 22–26****ASPB Conference of Plant Genetics:
Mechanisms of Genetic Variation
Snowbird, Utah**

Organizers: V. Sundaresan and R. Jorgensen.
<http://www.aspb.org/meetings/pg-2003>

October 27–31**20th International Scientific
Colloquium on Coffee
Kauai, Hawaii**

<http://www.asic-cafe.org>



ASP Placement Service Form

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

LAST NAME	TITLE	FIRST NAME	INITIAL
STREET ADDRESS			
CITY	STATE	ZIP	COUNTRY
TELEPHONE	FAX	E-MAIL	

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

- | | | | |
|------------------------------------|-------------------------------------|---------------------------------------|--------------------------------------|
| <input type="checkbox"/> Permanent | <input type="checkbox"/> Temporary | <input type="checkbox"/> Postdoctoral | <input type="checkbox"/> Industrial |
| <input type="checkbox"/> Academic | <input type="checkbox"/> Government | <input type="checkbox"/> USA only | <input type="checkbox"/> Outside USA |

US citizen? ☐ Yes ☐ No **Date available:** _____

Fields of interest, specialties, and publications titles: _____

Thesis, dissertation topics, professor: _____

Professional societies and honors: _____

Degree/year	Major	Minor	College/university and location

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

Employer and location	From	To	Position, title, and duties

References (names, addresses, and telephone numbers): _____



NOTICE

Beginning with the January/February 2003 issue, the *ASPBI News* will no longer carry job ads or meeting notices in the print edition. Job ads are posted weekly online at <http://www.aspb.org/jobbank/>. Meeting notices are posted at <http://www.aspb.org/meetings/>.

I. Registering with the ASPBI Placement Service and Obtaining Placement Files

ASPBI operates a placement service in which are kept active two files of résumés of individuals who are seeking employment. Employers are urged to survey the résumé 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, ASPBI 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 the *ASPBI News* and on the ASPBI Homepage

Please note that **you may now submit jobs directly online**. Simply go to <http://www.aspb.org/jobbank/> and select **Submit a Job**. If you have any questions, please contact Donna Gordon at dgordon@aspbi.org.

- **Academic/Government/Industry Permanent Positions (Ph.D. level):**
Fee: \$150. Includes listing in one issue of the *ASPBI News* and 12 weeks on the ASPBI online Job Bank.
Word Limit: 200 for print ad; no limit for online ad.
- **Postdoctoral Positions**
Fee: No charge for universities, nonprofit organizations, and government installations; \$150 for commercial companies. Includes listing in one issue of the *ASPBI News* and 12 weeks on the ASPBI 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, nonprofit organizations, and government installations; \$150 for commercial companies. Includes listing in one issue of the *ASPBI News* and 12 weeks on the ASPBI online Job Bank.
Word Limit: 200 for print ad; no limit for online ad.
- **Assistantships, Fellowships, Internships**
Fee: No charge; ad will appear in one issue of the *ASPBI News* and 12 weeks on the ASPBI online Job Bank.
Word Limit: None.

ACADEMIC

Sitlington Chair in Molecular Plant Biology Oklahoma State University, Stillwater (Received 07/29)

The Oklahoma State University (OSU) Division of Agricultural Sciences and Natural Resources invites applications at the Associate or Full Professor level to fill the Sitlington Chair in Molecular Plant Biology. Applicants must have a doctorate in a biological science and an internationally recognized research program that focuses on fundamental mechanisms in plant biology. Areas of interest include, but are not limited to, biotic and abiotic stress, metabolic engineering, signal transduction, genome evolution, development, and gene silencing. A strong background in functional genomics is desirable. This full-time (11-month) position encompasses a 75% research and 25% teaching effort. A significant endowment is available to support ongoing research activities. The successful applicant is expected to: 1) develop a

strong, externally funded research program, 2) provide innovative education and training at the undergraduate and graduate levels, and 3) foster strong academic ties among 25 interdisciplinary research groups associated with the OSU Plant Biotechnology Network (<http://plantbionet.okstate.edu>). State-of-the-art fully staffed core research facilities at OSU include Recombinant DNA/Protein Resource Facility, Microarray and Bioinformatics Facility, Hybridoma Center, Microscopy Center with TEM, SEM and confocal microscopes, and an NMR facility with 60 and 400 MHz instruments. Opportunity exists for significant research collaboration with the Plant Biology Division of the S.R. Noble Foundation in Ardmore, Oklahoma. Enhancement of areas of research strength in Oklahoma is a focus of this position.

Application Instructions: Review of applications will begin October 1, 2002, but applications will be accepted until a suitable candidate is identified. Applicants should submit a letter

addressing research and teaching philosophy and future research plans, a curriculum vitae, the names of four references along with contact information, and reprints of major publications to Charles M. Taliaferro, Chair, Search Committee for Sitlington Chair in Molecular Plant Biology, Division of Agricultural Sciences and Natural Resources, 368 Agricultural Hall, Oklahoma State University, Stillwater, OK 74078-6028; telephone: 405-744-9627.

Related Web Site: <http://opbs.okstate.edu/~melcher/FGjob.html>

Job Contact Email: cmt@mail.pss.okstate.edu

Faculty Position in Plant Physiology University of British Columbia, Vancouver (Received 07/30)

The Department of Botany invites applications for a tenure-track faculty position at the level of Assistant Professor in the area of Plant Physiology. Candidates should have a Ph.D. and

THE DEADLINE FOR ADS FOR THE NOVEMBER/DECEMBER ISSUE OF *ASPBI News* IS OCTOBER 31, 2002.

Check ASPBI's web site (<http://www.aspb.org/jobbank/>) every Friday for new job listings. Jobs with early application deadlines are listed on the web site but might not appear in the *ASPBI News*.

postdoctoral experience, with a demonstrated record of research excellence in plant physiology. Applicants with expertise in any area of plant physiology, from whole plant physiology to cellular/molecular physiology, are encouraged to apply. Successful candidates will be expected to establish an internationally competitive research program and will contribute to undergraduate teaching in the areas of plant physiology, cell physiology, and/or introductory biochemistry within the UBC Biology Program. Deadline for applications is November 1, 2002.

Application Instructions: Applicants should arrange to have three letters of reference sent by mail, and send a CV and a statement of research and teaching interests by mail or E-mail to Dr. Anthony Glass, Chair, Physiologist Search Committee, Department of Botany, University of British Columbia, #3529-6270 University Boulevard, Vancouver, BC V6T 1Z4, Canada.

**Faculty Positions in Plant Cell Biology
University of California, Riverside
(Received 08/22)**

Botany and Plant Sciences invites applications for an ASSISTANT and an ASSOCIATE PROFESSOR in plant cell biology. Individuals should work at the forefront of contemporary plant cell biology and utilize a multidisciplinary approach in areas such as cell cycle regulation, cell wall and/or cytoskeleton dynamics and function, programmed cell death, protein targeting, or signal transduction. The successful candidates will be expected to establish and maintain an innovative research program, have a strong commitment to teaching excellence at the undergraduate and graduate levels, and participate in departmental and interdepartmental graduate programs. Positions are available July 1, 2003 and include an appointment in the Agricultural Experimental Station. Applicants must hold a Ph.D., and postdoctoral experience is essential for candidates at the assistant level.

Application Instructions: Send a letter of application, curriculum vitae, statement of research interests, and three letters of reference (assistant level) or names and addresses of three references (associate level) to: Chair, Botany and Plant Sciences, University of California, Riverside, CA 92521-0124. Application review will begin October 1, 2002. The University of California is an Equal Opportunity/Affirmative Action Employer.

Related Web Site: <http://www.cepceb.ucr.edu>.

GOVERNMENT

**Research Molecular Geneticist (Plants)
USDA-ARS, Phoenix
(Received 08/29)**

Research Molecular Geneticist (Plants), GS-44-11/12/13/14; U.S. Department of Agriculture, Agricultural Research Service (USDA-ARS), Western Cotton Research Lab, Phoenix, AZ has a permanent full-time vacancy. The incumbent will use molecular approaches in conjunction with conventional genetics to evaluate and enhance long and/or short staple cotton Germplasm. Objectives may include: 1) Utilize marker-assisted selection to accelerate germplasm improvement. 2) Identification, characterization and manipulation of genes that regulate biochemical pathways that impact cotton yield, fiber/seed quality, or tolerance to environmental stress. 3) Develop and evaluate new genetic resources. Incumbent will interact with team members conducting active programs in plant breeding and plant physiology/biochemistry. Salary range is \$45,285.00–\$99,150.00 per year.

Application Instructions: The full text vacancy announcement and application instructions may be obtained via the Internet www.ars.usda.gov or call Michelle Worthen on 602-437-1376, ext. 282; indicate announcement number ARS-X2W-2449. Incomplete applications will not receive consideration. Applications must be postmarked by December 3, 2002. Applicants must be U.S. citizens; USDA, ARS is an Equal Opportunity Employer. For more information contact Dr. S. J. Crafts-Brandner, 602-437-0121, ext. 222.

Related Web Site: <http://www.ars.usda.gov>

Job Contact Email: scraftsbrandner@wcl.ars.usda.gov

INDUSTRIAL

**Research Scientist
Pioneer—A DuPont Company, Des Moines, Iowa
(Received 07/05)**

Pioneer Hi-Bred International, Inc. is the world leader in the discovery, development and delivery of elite crop genetics. We have an immediate opening for a Seed Physiologist to lead research aimed at understanding mechanisms underlying superior stand establishment and improving assessment of seed quality and product performance. Duties and responsibilities include 1) identifying genes, pathways and markers for cold germination and seedling stress tolerance, 2) developing predictive tools for stand establishment under stress, and 3) supporting efforts to improve seed quality through developing and evaluating new vigor tests. A Ph.D. in seed biology, plant physiology or crop science with at least 2-3 years relevant experience is required. Additional qualifications include demonstrated

ability to independently conceive and implement research projects, strong technical background including relevant physiological, molecular and statistical tools, strong communication skills, and ability to work cross functionally across business units. Strong project management and supervisory skills are also essential. Visit www.pioneer.com for a complete job description. You must reference Job Code RES/PP159/PAP in order to be considered. EOE

Application Instructions: Please send a resume/cover letter and three references to Resume Processing Center, Pioneer, A DuPont Company, PO Box 14453, Des Moines, IA 50306-3453, or e-mail apply@pioneerjobs.com.

**Biochemist/Enzymologist
Monsanto Company, St. Louis
(Received 07/12)**

Responsibilities: At Monsanto, we are pioneering the use of leading-edge biotechnology to revolutionize agriculture. We are currently in search of a top-notch Ph.D. to be a contributing team member within Monsanto's Biochemistry team. Expertise in protein purification and characterization, enzyme kinetics and mechanism, and assay development. Experience working with plants and plant proteins is desirable, but not required. Knowledge of metabolism and metabolic pathways of plants or microbes a plus. This individual will work in a team environment, but must be a self-starter, capable of working independently, occasionally directing the efforts of junior scientists. Good oral and written communication skills for the presentation of technical material essential. **Required Skills:** Ph.D. level scientist in the area of biochemistry or enzymology. Good oral and written communication skills for the presentation of technical material essential. Monsanto values diversity and is an equal opportunity affirmative action employer.

Application Instructions: To respond to this job, access our website at <http://www.monsanto.com>

Related Web Site: <http://www.monsanto.com>

**Scientist
GenApps Inc., Winchester, Kentucky
(Received 07/12)**

GenApps Inc., an agricultural research and biotechnology company, has a Scientist position available. The individual would be part of a team using novel approaches to improve plant growth and development. The qualified candidate should be a motivated individual with a Ph.D. in Biochemistry, Molecular Biology or a related discipline. Demonstrated ability to initiate and perform independent research in biochemistry and/or molecular biology areas. Strong knowledge and outstanding skills in biochemical and

metabolic pathways, analytical biochemistry, protein purification/characterization, and enzyme kinetics are necessary. Demonstrated experience in core molecular biology skills including gene cloning, plasmid construction, protein expression/profiling, or cDNA/genomic library construction/screening would be useful. Qualified applicant must be able to provide technical expertise, intellectual support to develop innovative research projects and meet challenging research objectives. Candidate must possess effective communication skills and ability to work under collaborative environment. We offer competitive salary, excellent benefits package and the opportunity for growth in an outstanding work environment. Must have proof of eligibility for working visa. EEO/M/F/V/D.

Application Instructions: To become part of a dynamic organization, please forward or fax your resume, salary history/ requirements and references to GenApps Inc., Human Resources Coordinator, P.O. Box 237, Winchester, KY 40391; fax 859-744-4195.

RESEARCH/TECHNICAL (NON-PH.D.)

Research Specialist—Molecular Breeding University of Missouri, Columbia (Received 07/18)

A full-time research specialist position is available in the Soybean Biotechnology Laboratory at the University of Missouri, Columbia. Applications will be taken until September 30, 2002 or when a suitable applicant is identified. The primary responsibility of this person will be to develop high throughput molecular breeding methodologies and to conduct research on marker-assisted selection for economically important traits in soybean. Excellent organizational skills and ability to maintain effective work relationships with other investigators in a large research team are essential. Individuals with M.S. degree in Microbiology, Biochemistry, Biology, or Plant Sciences are suitable for this position. Experience in molecular biology and genotyping technologies is preferred. Salary will be commensurate with experience and qualifications. University of Missouri is an equal opportunity/ADA institution.

Application Instructions: Applicants should provide a letter of interest, a resume, and college transcripts and arrange for three references to be sent to Dr. Henry T. Nguyen, Missouri Soybean Merchandising Council Endowed Professor of Genetics and Biotechnology, Department of Agronomy, 1-87 Agriculture Building, University of Missouri, Columbia, MO 65211; telephone: (573) 882-5494; e-mail: nguyenhenry@missouri.edu.

Related Web Site: <http://http://psu.missouri.edu/nguyenlab/>

Job Contact Email: nguyenhenry@missouri.edu

Technical Research Position University of Hawaii, Honolulu (Received 07/19)

A full-time technical research position (APT) is available to work in a plant molecular biology laboratory. Research responsibilities will range from gene regulation, protein biochemistry and genomics. Additional duties include training and supervising students, summarizing and presenting research results, maintaining essential records and inventories for lab operations. Qualified applicants need to be capable of providing technical expertise and intellectual support to achieve research objectives and develop new projects. Minimum qualifications include a B.S. and M.S. in either the biological or chemical sciences with significant experience in molecular biology and biochemistry. Desirable qualifications include experience in the plant sciences and computer analysis of protein and DNA sequences. Salary is commensurate with experience. Health benefits provided. The position is available immediately and will be renewed annually based on adequate performance.

Application Instructions: Please send letter of application, detailed curriculum vitae, and contact information for three references to Dr. David A. Christopher, Department of Molecular Biosciences & Bioengineering, University of Hawaii, 1955 East-West Rd. AgSciences Rm 218, Honolulu, HI 96822; e-mail: dchr@hawaii.edu; FAX 808-956-8550. Applications will be considered until the position is filled. The University of Hawaii is an EO/AA employer.

Related Web Site: <http://www.hawaii.edu>

Job Contact Email: dchr@hawaii.edu

Plant Molecular Biology Research Technician U.S. Department of Agriculture Oxford, Mississippi (Received 08/12)

The USDA/ARS Natural Products Research Unit is seeking highly motivated applicants interested in participating in basic research projects involving the characterization and genetic engineering of plant secondary metabolic pathways. Ideal candidates will possess experience in vector construction, nucleic acid isolation, immunoblotting, recombinant library screening, and tissue culture; however less experienced applicants with strong academic backgrounds are also encouraged to apply. Salary and benefits are competitive and commensurate with experience. U.S. citizenship is required for this position. We offer an opportunity to work in a dynamic new, state-of-the-art research facility in a multi-disciplinary effort involving university and government researchers. The Natural Products Center is located on the University of Mississippi campus, nestled in the rolling hills of Northern Mississippi in the city of Oxford.

Application Instructions: For application procedures please contact Ms. Jenny Davidson at (662) 232-2910, e-mail jdavidson@ars.usda.gov

Related Web Site: <http://www.olemiss.edu/depts/ncdnp/usda/>

Job Contact Email: jdavidson@ars.usda.gov

POSTDOCTORAL POSITIONS

Postdoctoral Position University of Arizona, Department of Plant Sciences, Tucson (Received 07/05)

A postdoctoral position is available for the development of novel methods for analysis of cell-specific gene expression primarily in *Arabidopsis thaliana*. This NSF-funded project, in collaboration with Dr. Julia Bailey-Serres at UC-Riverside, will involve the regulated transgenic expression of targeted forms of GFP, or other markers, followed by use of highly parallel methods (including microarrays) for the characterization of gene expression within the subsets of cells that have been highlighted by marker expression. We are searching for individuals that can provide leadership within our scientific team. Prior experience in molecular biology is essential, and additional experience in the production of transgenic plants and in high-throughput genomics would be highly desirable.

Application Instructions: Individuals interested in applying for this position should send a cover letter, a curriculum vitae, and the names and addresses of three references to Dr. David Galbraith, Department of Plant Sciences, University of Arizona, 303 Forbes Building, Tucson AZ 85721; e-mail galbraith@arizona.edu.

Postdoctoral Position University of Michigan, Ann Arbor (Received 07/05)

A postdoctoral position is available for two years in the Department of Molecular, Cellular, and Developmental Biology to work on peroxisome biogenesis in plants (Johnson and Olsen. 2001. *Plant Physiol.* 127:731-739). The project focuses on the PTS2 pathway of protein import into peroxisomes. The position requires good interpersonal and communication skills, attention to detail, and the ability to perform complex technical tasks and keep accurate and detailed records. A Ph.D. in a relevant area is required. Candidates should have experience in plant cell biology, molecular biology, and/or biochemistry. Starting salary will be commensurate with training and experience. Benefits are included. The University of Michigan values cultural diversity and encourages applications from all underrepresented groups, including women, minorities, and people with disabilities.

Application Instructions: Applicants should send a cover letter with a brief description of research experience and goals, a curriculum vitae, and contact information for three professional referees to Dr. Laura J. Olsen, MCD Biology, University of Michigan, Ann Arbor, MI 48109-1048; telephone 734-763-0976, fax 734-647-0884, e-mail ljo@umich.edu.

Plant Molecular Biologist
University of New Hampshire, Durham
(Received 07/12)

Applicants are invited for a plant molecular biologist to conduct research in the area of gene cloning and genetic engineering of biosynthetic pathways in plants. Experience and training in the area of plant molecular biology, specifically in the field of gene cloning and gene expression in plants is required. The primary job of the incumbent will be to work on the cloning of a number of plant genes, production of expression constructs with these genes, and study the expression of these genes in plant cells. Significant experience in the areas of gene cloning and sequencing, dicot transformation systems, and plasmid vector construction is required. Experience working with plant tissue culture and the proven ability to work as part of a multidisciplinary team is strongly preferred. Expertise in plant biochemistry would be a plus. Applicants must have a Ph.D. in Plant Molecular Biology or a related field. Position is a twelve-month appointment, potentially renewable annually for three years. Salary is competitive and commensurate with experience. UNH is an equal opportunity employer.

Application Instructions: Application, including a curriculum vitae and three letters of recommendation, should be sent to Dr. Subhash C. Minocha, Professor of Plant Biology and Genetics, Rudman Hall, University of New Hampshire, Durham, NH 03824; telephone 603-862-3840, fax 603-862-3784, e-mail sminocha@cisunix.unh.edu.

Related Web Site: <http://www.pbio.unh.edu/faculty/minocha/minocha.html>

Postdoctoral Position
University of Louisiana, Lafayette
(Received 07/12)

A postdoctoral position is available immediately for the continuation of a NASA-funded project concerning the gravisensing mechanism in plants, which includes an experiment onboard the Space Shuttle. The successful applicant must be familiar with light-microscopy techniques and should have a strong background in plant physiology and/or biophysics. Candidates should have a Ph.D. in plant biology, biophysics, biochemistry,

or a related field and evidence of research potential as demonstrated by publications in peer-reviewed journals. The individual must be able to communicate effectively and will be expected to write manuscripts.

Application Instructions: To apply for this position, please send a cover letter, curriculum vitae, representative publications, and names and e-mail addresses of three references to Karl H. Hasenstein, Ph.D., Professor, Biology, UL Lafayette, Lafayette, LA 70504-2451; e-mail (preferred) hasenstein@louisiana.edu..

Related Web Site: <http://www.ucs.louisiana.edu/~khh6430/>

Postdoctoral Positions
Cornell University, Ithaca, New York
(Received 07/12)

Two postdoctoral positions in plant nutritional genomics are available immediately. The projects will focus on 1) applying genomic, biochemical and molecular approaches to study the regulation of biosynthesis of organic forms of selenium that have anticarcinogenic properties in plants; 2) isolating and characterizing a novel carotenoid mutation in cauliflower to better understand the molecular regulation of plant carotenoid accumulation and to enhance pro-vitamin A content in food crops. Candidates should have strong background and experience in plant molecular biology, biochemistry, genetics, and/or physiology.

Application Instructions: Interested applicants should send a curriculum vitae, a cover letter describing career goals and research interests, and the contact information for three references to Dr. Li Li, Plant Molecular Biologist, U.S. Plant, Soil and Nutrition Laboratory, Cornell University, Ithaca, NY 14853; e-mail LL37@cornell.edu.

Postdoctoral Position
University of California at Berkeley
(Received 07/12)

Postdoctoral position is available immediately for research on the biological conversion of carbon dioxide to useful hydrocarbons. Candidates should have experience in microbial cultivation techniques, with a Ph.D. in chemical engineering, microbiology, or related field. One- to two-year appointment with possibility of extension. Salary commensurate with experience. The University of California is an equal opportunity/affirmative action employer.

Application Instructions: Send resume and names of three references to Prof. Douglas S. Clark, Dept. of Chem. Eng., University of California., Berkeley, CA 94720; fax 510-643-1228, e-mail clark@cchem.berkeley.edu.

Postdoctoral Positions
U.S. Naval Research Laboratory
Washington, DC
(Received 07/12)

The Center for Bio/Molecular Science and Engineering at the Naval Research Laboratory has openings for postdoctoral research associates in plant molecular biology, biochemistry and biophysics. Positions are available in the areas of: (1) self-assembly of photosynthetic proteins in vitro, (2) energy migration in photosynthetic light-harvesting antennae, (3) electron transfer in photosynthetic reaction centers. CBMSE is one of the Nation's leading interdisciplinary research organizations applying modern techniques from the areas of chemistry, physics, molecular biology, and chemical engineering to a variety of studies. Starting salaries are \$53K/yr and there are opportunities for transition to permanent status after a successful postdoctoral tenure. Candidates must have received a Ph.D. in a relevant field within the last 5-7 years.

Postdoctoral positions are tenable through either the NRC Research Associateship Program or the ASEE/ONR Postdoctoral Fellowship Program. U.S. Citizenship or permanent residency is required. NRL is an equal opportunity employer.

Application Instructions: Interested persons should send a resume, including a list of publications and references, to Ms. Ena Barts, Code 6910, Naval Research Laboratory, Washington, DC 20375; e-mail enb@cbmse.nrl.navy.mil.

Postdoctoral Position
National Pingtung University of Science and Technology, Nei-pu Pingtung, Taiwan
(Received 07/12)

A postdoctoral is available for up to two years to help genetic transformation and T-DNA tagging of oncidium orchid and cloning genes related to flowering and plant development. The successful candidate will participate in developing protocols of tissue culture and regeneration, Agrobacterium or particle bombardment-mediated transformation for oncidium, and to establish molecular cloning procedures to isolate tagged genes and their characterization. The candidate should have a strong background in molecular biology with experience in cDNA construction, RACE, library screening, EST, RNA analysis. Start date is from August 1, 2002 or until filled.

Application Instructions: Send application, curriculum vitae (including a list of publications), and contact information of three references to Dr. Fure-Chyi Chen, National Pingtung University of Science and Technology, Department of Plant Industry, 1 Hsue-Fu Rd., Nei-pu, Pingtung, Taiwan 91201; e-mail furechen@mail.npust.edu.tw.

**Postdoctoral Associate: Soybean Genomics
University of Missouri-Columbia
(Received 07/18)**

Postdoctoral research associate position is available in the Soybean Biotechnology Laboratory at the University of Missouri-Columbia. Applications will be taken until September 30, 2002, or when a suitable applicant is identified. The primary responsibility of this person will be to conduct genetic mapping of economically important traits and physical mapping of the soybean genome. The individual is expected to assist in the development of high throughput technologies for mapping and soybean molecular breeding. Excellent organizational skills and ability to maintain effective work relationships with others in a large research team are essential. Individuals with a Ph.D. degree in Genetics, Microbiology, Molecular Biology or Biological Sciences are suitable for this position. Experience in genome mapping and high throughput genotyping technologies is preferred. Salary will be commensurate with experience and qualifications. University of Missouri is an equal opportunity/ADA institution.

Application Instructions: Applicants should provide a letter of interest and a complete resume, and arrange for three references to be sent to Dr. Henry T. Nguyen, Missouri Soybean Merchandising Council Endowed Professor of Genetics and Biotechnology, Department of Agronomy, 1-87 Agriculture Building, University of Missouri, Columbia, MO 65211, telephone (573) 882-5494; e-mail: nguyenhenry@missouri.edu.

Related Web Site: <http://psu.missouri.edu/nguyenlab/>

Job Contact Email: nguyenhenry@missouri.edu

**Postdoctoral Research Associate in Plant
Molecular Biology
Plant Molecular Biology-Functional Genomics
University of Missouri-Columbia
(Received 07/18)**

Candidates with an interest in functional genomics and molecular biology of soybean and model legumes are invited to apply for this position. This is a collaborative research project between Prof. Gary Stacey (StaceyG@missouri.edu) and Prof. Henry Nguyen laboratories at the University of Missouri-Columbia (MU). Both recently joined MU as Missouri Soybean Merchandising Council Endowed Professors. This research project will focus on transcript profiling and isolation of genes associated with drought tolerance and other important traits in soybean. Opportunities exist for comparative functional genomic analysis with model legumes. The successful candidate is expected to have

substantial experience in the construction of full-length cDNA libraries, gene cloning and transcript profiling. The position is available immediately or when a suitable candidate is identified. Salary is competitive. University of Missouri is an equal opportunity/ADA institution.

Application Instructions: Please send a letter of application and a resume, which includes names, telephones and e-mail addresses of three references to: Dr. Gary Stacey, MSMC Endowed Professor, Department of Plant Microbiology and Pathology, 108 Waters Hall, University of Missouri, Columbia, MO 65211; e-mail StaceyG@missouri.edu.

Related Web Site: <http://psu.missouri.edu/staceylab/index.htm>

Job Contact Email: StaceyG@missouri.edu

**Postdoctoral Position in Cell/Molecular Biology
University of California, Riverside
(Received 07/19)**

The persons will study the cell, molecular, and developmental biology of the tapetum cells in flowers. (See *J. Biol. Chem.* 277: 22677, 2002; 274: 22884, 1999; PNAS 94: 12711, 1997). The laboratory is relatively small, and the persons will be able to interact closely with the supervisor. Candidates should have background in cell/molecular/developmental biology and biochemistry and excellent skills in molecular cloning. Prior experience in fluorescence/electron microscopy will be a plus. Please send resume and names of referees to Dr. Anthony Huang at: Department of Botany and Plant Sciences, University of California, Riverside, CA 92521, telephone (909) 787-4783; fax (909) 787-4437; e-mail Anthony.Huang@ucr.edu.

Application Instructions: send Vitae and names of referees

Job Contact Email: Anthony.Huang@UCR.edu

**Four Postdoctoral Positions in
Arabidopsis Proteomics
State University of New York, Stony Brook
Cold Spring Harbor Laboratory
University of California, Riverside
Carnegie Institution, Stanford
(Received 07/22)**

Four postdoctoral positions in Arabidopsis proteomics are available starting October 2002. The project is funded by the Arabidopsis 2010 Program of NSF and is aimed at fluorescent tagging of a large number of the functionally-unassigned Arabidopsis genes and determination of expression patterns and subcellular localization of their protein products. Three positions

will be allocated for molecular and cell biology work and one for bioinformatics. The cell biology positions will be in the laboratories of Dr. Vitaly Citovsky (Stony Brook), Dr. Natasha Raikhel (UCR) and Dr. David Jackson (CSHL). The bioinformatics position will be in the groups of Dr. Sue Rhee (TAIR, Carnegie, Stanford) and Dr. David Ehrhardt (Carnegie, Stanford). Required qualifications include experience in the respective field of each position and record of publications. The salary is commensurate with the qualification of the candidate.

Application Instructions: For more details or applications (curriculum vitae and three letters of reference), please contact: Dr. Vitaly Citovsky, Department of Biochemistry and Cell Biology, State University of New York, Stony Brook, NY 11794-5215; telephone 631-632-9534, fax 631-632-8575, e-mail vitaly.citovsky@stonybrook.edu.

Dr. David Jackson, Cold Spring Harbor Laboratory, 1 Bungtown Rd., Cold Spring Harbor, NY 11724; telephone 516-367-8467; email jacksond@cshl.org; <http://www.cshl.org/public/SCIENCE/jackson.html>;

Dr. Natasha Raikhel, Department of Botany and Plant Sciences and The Center for Plant Cell Biology, 2109 Batchelor Hall, University of California, Riverside, CA 92521; Tel: 909-787-6370; fax: 909-787-4437; e-mail natasha.raikhel@ucr.edu; **or**

Dr. Sue Rhee, e-mail: rhee@coms.stanford.edu; SUNY Stony Brook, CSHL, and the Carnegie Institution are Equal Opportunity/Affirmative Action Employers. Applications from women, people of color, disabled persons, and/or special disabled or Vietnam era veterans are especially welcome.

Job Contact Email:
vitaly.citovsky@stonybrook.edu

**Postdoctoral Research Associate
Washington State University, Pullman
(Received 07/22)**

Postdoctoral position available immediately to work on the biochemistry, genetics and physiology of bacterial energy metabolism and alfalfa gene expression in symbiotic nitrogen fixation. Initial appointment will be for one year but may be extended for additional years.

Application Instructions: Please send curriculum vitae and contact information for three references to Dr. Michael Kahn, Institute of Biological Chemistry, Washington State University, Pullman, WA 99164-6340; telephone: 509-335-8327; fax: 509-335-7643; kahn@wsu.edu. WSU is an EO/AA employer.

Job Contact Email: kahn@wsu.edu

**Postdoctoral Position on Aquaporins
CNRS/INRA, Montpellier, France
(Received 07/25)**

A one-year postdoctoral position (with possibility of an extension) is available from September 2002 to study aquaporin water channels in *Arabidopsis*. Current research in the group (*Plant Physiol.*, 125: 135, 2001; *Plant J.*, 30: 71, 2002; *Int. Rev. Cytol.*, 215: 105, 2002) includes the molecular and functional characterization of aquaporins and the study of their physiological role in roots. The candidate will participate in either one of the two main projects of the group and study (1) at the cellular and molecular levels the regulatory mechanisms which target root aquaporins or (2) the integrated function of aquaporins in T-DNA insertion *Arabidopsis* mutants. All motivated candidates with a strong background in molecular biology and/or plant physiology will be considered. Knowledge in plant water relations and/or stress responses will be a plus.

Application Instructions: Enquiries or applications including a CV, description of previous research experience and contact informations for three referees should be sent by e-mail to Christophe Maurel (maurel@ensam.inra.fr), BPMP, INRA/CNRS, 2 place Viala, 34060 Montpellier, France. The position is open only to citizens from countries outside the European Union.

Job Contact Email: maurel@ensam.inra.fr

**Research Associate
University of Wisconsin-Madison
(Received 07/25)**

Postdoctoral position (Research Associate) available immediately for an individual to become part of a team effort focused on development of novel technologies for plant transformation. Requirements: (1) expertise in plant molecular biology and tissue culture; (2) proven publication record in internationally recognized journals; (3) capability for writing grant proposals and establishment of independent research projects. The successful candidate will interact with other scientists and engineers in a team-oriented, collaborative approach. This is a one-year appointment, renewable for a period of up to three years contingent upon satisfactory progress and continued funding. The Wisconsin Center for Space Automation and Robotics, University of Wisconsin-Madison, offers a unique opportunity for interfacing biotechnology, bioengineering and microgravity research. Information on WCSAR is available at <http://wcsar.engr.wisc.edu>. The University of Wisconsin is an equal opportunity employer.

Application Instructions: Send curriculum vitae and the names of three references to: Bratislav Stankovic, University of Wisconsin-Madison, Wisconsin Center for Space Automation and Robotics (WCSAR), 545 Science Drive, Madison, WI 53711; telephone: (608) 265-8247; fax: (608) 262-9458; e-mail: bstankovic@facstaff.wisc.edu.

Related Web Site: <http://wcsar.engr.wisc.edu>

Job Contact Email: bstankovic@facstaff.wisc.edu

**Postdoctoral Research Associate
University of Nebraska-Lincoln
(Received 07/25)**

The Department of Agronomy and Horticulture at the University of Nebraska-Lincoln is seeking applicants for a Postdoctoral Research Associate to conduct research on gene expression in transgenic soybeans. A non-tenured, one-year appointment with the option to extend an additional year is contingent on availability of grant funds and satisfactory performance, not to exceed a three-year period. The research will include characterization of soybean lines expressing a heterologous iron chelate reductase and its impact on iron mobilization within the plant, and the design of recombinant DNA elements for use in soybean genetic engineering studies to enhance the nutritional composition of the seed and the subsequent characterizations of the derived transgenic soybean lines. The successful candidate is expected to interact with members of the Plant Transformation Core Research Facility and help mentor Graduate Students and undergraduates in the lab. Research progress will be reported to the project team on a consistent basis with written reports for publication or presentation at appropriate scientific meetings expected. The successful candidate will submit a written report on the research activities at the end of eleven months to be used to evaluate satisfactory performance. Requires a PhD in plant sciences or a closely related field and strong written and oral communication skills; a solid skill-base in biochemistry and molecular biology is desirable. Starting salary is \$26,997 annually, plus benefits excluding retirement. The University of Nebraska is committed to a pluralistic campus community through affirmative action and equal opportunity. We assure reasonable accommodation under the Americans with Disabilities Act. Contact Dr. Clemente for assistance or information (telephone: 402/472-1428, e-mail tclement@unlnotes.unl.edu).

Application Instructions: A letter of application, resume, transcripts and two letters of reference must be received by November 30, 2002, to be considered in the first round of selection. Send

application materials to Dr. Thomas Clemente, Mgr. Plant Transformation Core Research Facility, Room E324, Beadle Center, University of Nebraska, Lincoln, NE 68588-0665.

Related Web Site: <http://http://psiweb.unl.edu/fac3.html>

Job Contact Email: tclemente@unlnotes.edu

**Microarray Specialist
Genome BC and the University of British
Columbia, Vancouver
(Received 07/26)**

The Genome BC / Genome Canada Forestry project at the University of British Columbia (www.genomebc.ca) in collaboration with Dr. Colleen Nelson at the Jack Bell Microarray Laboratory has an immediate opening for a technician or postdoctoral research associate with experience in microarray development and microarray data analysis. The successful candidate will be working in a team and will be responsible for microarray development for *Arabidopsis*, poplar and/or spruce (oligo-nucleotide arrays and cDNA arrays), application of microarrays, and data analysis. Expression profiling will target genes involved in wood formation and stress response to insects, pathogens and extreme environmental conditions that affect plant and forest productivity. The position is initially for one year with possibilities for extension.

Application Instructions: Please send applications to Dr. J. Bohlmann, UBC Biotechnology Laboratory, University of British Columbia, 237-6174 University Boulevard, Vancouver, V6T 1Z3, B.C. Canada, bohlmann@interchange.ubc.ca. Screening of applications will start immediately until the position is filled.

Related Web Site: www.genomebc.ca

Job Contact Email: bohlmann@interchange.ubc.ca

**Postdoctoral Research Associate
University of Nebraska-Lincoln
(Received 07/26)**

The Department of Agronomy and Horticulture at the University of Nebraska-Lincoln is seeking applicants for a Postdoctoral Research Associate to conduct research on molecular and biochemical characterization of soybean germplasm derived through the tools of biotechnology with novel fatty acid profiles in the seed storage lipids. A non-tenured, one-year appointment with the option to extend an additional year is contingent on availability of grant funds and satisfactory performance, not to exceed a three-year period. The successful candidate will be part of an interdisciplinary team that includes expertise in

plant transformation, plant breeding, plant molecular biology and biochemistry. The research will include molecular characterization of the soybean germplasm, including cloning of the junction fragments proximal to the site of integration of the foreign DNA element, and biochemical analysis of the derived soybean meal. Additional responsibilities will include evaluating the feed quality of the processed seed meal and assembling of novel constructs for genetic engineering. Assistance in coordination of other aspects of the soybean biotechnology research effort, including supervising Research Technologists, and mentoring of graduate and undergraduate students within the team is expected. The individual will consult regularly with the leader of the Soybean Research Team, and research progress will be reported on a quarterly basis with written reports for publication or presentation at appropriate meetings expected. The successful candidate will submit a written report on the research activities at the end of eleven months to be used to evaluate satisfactory performance. Requires a PhD in plant sciences or a closely related field and strong written and oral communication skills. Starting salary is \$32,204 annually, plus benefits excluding retirement. The University of Nebraska is committed to a pluralistic campus community through affirmative action and equal opportunity. We assure reasonable accommodation under the Americans with Disabilities Act. Contact Dr. Clemente for assistance and information (telephone: 402-472-1428, e-mail tclement@unlnotes.unl.edu).

Application Instructions: Plant Transformation Core Research Facility, Room E324, Beadle Center, University of Nebraska, Lincoln, NE 68588-0665.

Related Web Site: <http://www.psiweb.unl.edu/fac3.html>

Job Contact Email: tclemente1@unl.edu

Postdoctoral Research Associate University of Nebraska-Lincoln (Received 07/26)

The Department of Agronomy and Horticulture at the University of Nebraska-Lincoln is seeking applicants for a Postdoctoral Research Associate to conduct research on novel strategies to enhance *Agrobacterium*-mediated transformation protocols of wheat and soybean. A non-tenured, one-year appointment with the option to extend an additional year is contingent on availability of grant funds and satisfactory performance, not to exceed a three-year period. The research will include the production of recombinant DNA constructs, plant transformation, tissue culture and plant regeneration, and the analysis of transformed plants for gene expression at the

nucleic acid and biochemical levels. The individual is expected to interact with members of the Plant Transformation Core Research Facility and help mentor graduate students and undergraduates in the lab. Research progress will be reported to the project team on a consistent basis with written reports for publication or presentation at appropriate scientific meetings expected. The successful candidate will submit a written report on the research activities at the end of eleven months to be used to evaluate satisfactory performance. Requires a PhD in plant sciences or a closely related field and strong written and oral communication skills; a solid skill-base in *Agrobacterium*-mediated gene transfer protocols is desirable. Starting salary is \$32,204 annually, plus benefits excluding retirement. The University of Nebraska is committed to a pluralistic campus community through affirmative action and equal opportunity. We assure reasonable accommodation under the Americans with Disabilities Act. Contact Dr. Clemente for assistance and information (telephone 402-472-1428, e-mail tclement@unlnotes.unl.edu).

Application Instructions: A letter of application, resume, transcripts and two letters of reference must be received by November 30, 2002, to be considered in the first round of selection. Send application materials to Dr. Thomas Clemente, Mgr. Plant Transformation Core Research Facility, Room E324, Beadle Center, University of Nebraska, Lincoln, NE 68588-0665.

Related Web Site: <http://www.psiweb.unl.edu/fac3.html>

Job Contact Email: tclemente1@unl.edu

Postdoctoral Fellow Samuel Roberts Noble Foundation Ardmore, Oklahoma (Received 07/29)

The Samuel Roberts Noble Foundation is recruiting a postdoctoral fellow to work on the application of microscopy and live cell imaging techniques to basic questions in plant biology using *Arabidopsis thaliana* and the model legume *Medicago truncatula*. Research topics include but are not limited to plant cytoskeleton, gravitropism, and root growth and development. The successful applicant will have a Ph.D. in Plant Cell or Molecular Biology. Preference will be given to candidates with training in confocal/fluorescence microscopy and/or fluorescence imaging of ions in plant cells. Experience in molecular biology would be advantageous. Starting salaries begin at \$36,500. Informal inquiries can be directed to Dr. Elisa Blancaflor, e-mail: eblancaflor@noble.org. Application and job description available online at www.noble.org.

Application Instructions: Please send an application, cover letter, complete curriculum vitae and arrange for three professional references to be sent to: Human Resources Department, Attn: Position #PB-S095-33, The Samuel Roberts Noble Foundation, Inc. P. O. Box 2180, Ardmore, OK 73402; telephone: (580) 224-6231; fax: (580) 224-6240; e-mail address NFHR@Noble.org.

Related Web Site: <http://www.noble.org>

Job Contact Email: eblancaflor@noble.org

Postdoctoral Fellow Children's Nutrition Research Center Baylor College of Medicine, Houston (Received 07/29)

Two postdoctoral fellowships are available to study the role of *Arabidopsis* transporters in ion homeostasis. Experience in plant physiology, or molecular biology required. Incumbents must be well organized, capable of supervising technicians and receptive to travel to other labs to broaden their technical skills. Positions available immediately and pending adequate progress, funding is available for 4 years; however, preference will be given to applicants who desire obtaining their own funding.

Application Instructions: Interested applicants should contact Kendal Hirschi at kendalh@bcm.tmc.edu.

Related Web Site: <http://www.bcm.tmc.edu/cnrc>

Job Contact Email: kendalh@bcm.tmc.edu

Postdoctoral Research Associate: Virus-Mediated Vaccine Production Texas A&M University, College Station (Received 07/30)

Postdoctoral Research Associate position is available at Texas A&M University, beginning January 2003 to investigate the use of plant viruses as gene vectors for veterinary vaccine production. The position is guaranteed for two years, with satisfactory progress. The incumbent should have an earned Ph.D., experience with viruses, molecular biology, protein and antibody assays. Salary is \$31,000 per year with full benefits. The position is housed within the Dept. of Plant Pathology and Microbiology under the auspices of the Intercollegiate Faculty of Virology.

Application Instructions: Please send a c.v. pasted into the body of the message (no attachments), include links to publications, and three names for professional reference. Texas A&M University is an equal opportunity employer.

Related Web Site: <http://www.cvm.tamu.edu/virology/>

Job Contact Email: scholth@fas.harvard.edu

Postdoctoral Research Associate: Plant-Virus Interactions**Texas A&M University, College Station (Received 07/30)**

This Postdoctoral Research Associate position is available at Texas A&M University, beginning January 2003 to investigate protein-protein interactions that control plant virus-mediated suppression of gene silencing or cell-to-cell movement. The main objective is to study structure-function relationships between virus and host proteins through biochemical approaches and x-ray crystallography. The position is guaranteed for two years contingent upon satisfactory progress. The incumbent should have an earned Ph.D., experience in biochemistry and molecular biology, and proficiency in protein purification and structural biology is desired. Salary is \$31,000 per year with full benefits. The position is housed within the Dept. of Plant Pathology and Microbiology at Texas A&M University under the auspices of the Intercollegiate Faculty of Virology, and involves a collaborative project that is currently pursued at Harvard Medical School.

Application Instructions: Please send a c.v. pasted into the body of the message (no attachments), include links to publications, and three names for professional reference. Texas A&M University is an equal opportunity employer.

Related Web Site: <http://www.cvm.tamu.edu/virology/>

Job Contact Email: Herman_Scholthof@hms.harvard.edu

**Postdoctoral Fellow
Yale University, New Haven CT
(Received 08/01)**

Two postdoctoral positions are available immediately to work on host-virus interactions. Project is funded for four years by NSF-Plant Genome program. Candidates will be using functional genomics (virus-induced gene silencing, VIGS) and proteomics approaches. Candidates will co-ordinate their efforts with a bioinformatics programmer under the guidance of Dr. Hongyu Zhao's lab at the Yale medical school. Candidates must have a strong background in biochemistry and molecular biology. Experience in protein complex purification, HPLC, gel filtration chromatography, 2D gel electrophoresis and Mass spectrometry is a plus. Proven publication record is necessary. Experience in plants is not a requirement. Please send your CV and three reference letters to savithramma.dinesh-kumar@yale.edu. Candidates will be joining a dynamic group of postdocs, graduate students and technicians. For more information visit our

lab page <http://www.yale.edu/plantfunctionalgenomics>. Additional information about our departmental research activities can be found at <http://www.biology.yale.edu>. Information about Yale University and New Haven can be found in the web site <http://www.yale.edu>.

Application Instructions: Send e-mail to savithramma.dinesh-kumar@yale.edu

Related Web Site: <http://www.yale.edu/plantfunctionalgenomics>

Job Contact Email: savithramma.dinesh-kumar@yale.edu

**Postdoctoral Fellow
CNRS-UMR6037, IFRMP 23, Université de Rouen, France
(Received 08/02)**

A one-year postdoctoral position is available starting in September 2002, with a possible extension to two years. The group studies cell signaling within the secretory pathway. The candidate will work on vacuolar sorting processes in plant cells that are mediated by the receptor BP-80 (*Plant Cell*, 2001, 13:781; *Plant Cell*, 14:1077). The work will include (1) the identification of the trafficking partners used by the receptor and (2) the characterization of the intermediate compartments in traffic; trans Golgi network and prevacuole. The candidate should have a strong background in molecular biology, cell biology and biochemistry. Some knowledge in the use of a confocal microscope will be an advantage.

Application Instructions: Application should include a CV with a short description of previous research activity and addresses of three referees.

Send the application to Nadine Paris preferentially via e-mail.

Related Web Site: <http://www.univ-rouen.fr/UMR6037/>

Job Contact Email: nadine.paris@univ-rouen.fr

**Postdoctoral Research Associate
University of Maryland, College Park
(Received 08/02)**

Two postdoctoral fellowships are available to study the role of Arabidopsis transporters in ion homeostasis. Interest and experience in molecular biology, biochemistry, cell biology, plant physiology, and/or bioinformatics are needed. Incumbents must be able to supervise students or technicians, and be receptive to travel to other laboratories to broaden their technical skills. Positions are available as soon as Sept. 1, 2002, and renewable for up to 3 years pending satisfactory progress.

Project Summary: Plant growth, development, and survival depend on the uptake, translocation, and sorting of essential nutrients and exclusion of toxic ions. However, the molecular bases for these regulated transport processes are largely unknown. The first complete genome sequence of a plant, large mutant collections, and extensive databases provide opportunities to generate new resources and tools to discover the functions of over 800 transporters in Arabidopsis. The bulk of unknown transporters are secondary active transporters. The major objectives are to determine the ion specificity, the tissue and subcellular distribution, and the biological roles of H⁺-coupled cation transporters. With the availability of genomic sequences and the identification of transport homologs through bioinformatic analyses, heterologous expression in yeast will be used to delineate the function of the entire complement of H⁺-coupled cation transporters. For more info, see: <http://www.cbs.umn.edu/2010>.

Application Instructions: Send CV, 2-3 names of references, and brief statement of professional goals.

Related Web Site: <http://www.life.umd.edu/CBMG/>

Job Contact Email: hs29@umail.umd.edu

**Postdoctoral Research Associate
Department of Biology, Rhodes College
Memphis, Tennessee
(Received 08/09)**

A postdoctoral research position is available beginning January 2003 to study fungal cell wall development. Funding from NSF in support of this research is anticipated. The project will focus upon identification of Cal genes, which affect cell wall integrity in *Aspergillus nidulans*, and localization of Cal gene products. Candidates must have a Ph.D. plus proficiency in generating and localizing GFP fusions and epitope-tagged proteins. Experience with filamentous fungi is desirable but not required. Candidates must be able to work closely with students, and fluency in English is essential. Starting salary is \$34,000 per year with full benefits for three years. More information about this position can be found at hill.biology.rhodes.edu/nsfpostdoc.html.

Application Instructions: To apply, please send a cover letter, curriculum vitae, and complete contact information for three references to Dr. Terry W. Hill, Department of Biology, Rhodes College, 2000 North Parkway, Memphis, TN 38112 USA; e-mail to hill@rhodes.edu. Applications will be considered until the position is filled.

Related Web Site: <http://hill.biology.rhodes.edu/nsfpostdoc.html>

Job Contact Email: hill@rhodes.edu

**Postdoctoral Research Associate Fellow
University of Alabama, Tuscaloosa
(Received 08/09)**

**TWO POSTDOCTORAL POSITIONS
AVAILABLE IN PLANT EVOLUTIONARY
GENOMICS**

Two postdoctoral positions are available to study gene expression in basal angiosperms and gymnosperms as part of a multi-institutional, NSF-funded Plant Genome Research project investigating the evolution of flowers. The work at UA will involve development and implementation of high-throughput in situ RT-PCR assays (see *Plant Physiol.* 123:1203) for a variety of plant species. Applicants should be interested in evolutionary aspects of plant development and hold a PhD in plant molecular biology or a related discipline. Experience with in situ hybridization techniques is preferred. Additional opportunities exist for collaborative research with Dr. Victor Albert at the University of Oslo, Norway. Applicants should send a cover letter, CV, copies of up to five relevant publications, and contact information for three references to Dr. David G. Oppenheimer, Department of Biological Sciences, University of Alabama, 301 Biology, Tuscaloosa, AL 35487-0344 (mpollock@bama.ua.edu). Screening of applications will begin immediately and continue until the positions are filled. The University of Alabama is an affirmative action, equal opportunity employer.

Application Instructions: Applicants should send a cover letter, CV, copies of up to five relevant publications, and contact information for three references to Dr. David G. Oppenheimer, Department of Biological Sciences, University of Alabama, 301 Biology, Tuscaloosa, AL 35487-0344 (mpollock@bama.ua.edu). Screening of applications will begin immediately and continue until the positions are filled. The University of Alabama is an affirmative action, equal opportunity employer.

Job Contact Email: mpollock@bama.ua.edu

**Postdoctoral Research Associate in Phytoplankton Transcriptional Regulation
Stony Brook University, Marine Sciences
Research Center, Stony Brook, New York
(Received 08/12)**

We are seeking a Postdoctoral Research Associate to join a DOE-funded project that will use a combination of computational, biochemical, molecular genetic, and physiological approaches

to define transcriptional regulatory networks in cyanobacteria. Experiments will be conducted using several different cyanobacterial strains, both marine and freshwater, growing under a variety of conditions. The project will require detailed characterization of the physiological status of these cultures and the development or adaptation of new methods to test predicted regulatory interactions and to search for novel interactions. The project is located at the Marine Sciences Research Center, and will also take advantage of resources available elsewhere on the SUNY Stony Brook campus. Further information is available from the SUNY Stony Brook web site at URLs <http://naples.cc.sunysb.edu/Admin/CampusJob.nsf/4275f015e692fb5985256b9400738daa/5500f3d675adcb3f85256c0800499b2a?OpenDocument> and http://www.msrb.sunysb.edu/pages/Faculty_Prof/Collier.html.

Application Instructions: The application deadline is October 31, 2002 (position will remain open until filled). Please submit a cover letter and resume to Jackie L. Collier, Assistant Professor, MSRC, Discovery 145, Stony Brook University, Stony Brook, NY 11794-5000; e-mail jcollier@notes.cc.sunysb.edu

Related Web Site: <http://www.msrb.sunysb.edu>
Job Contact Email: jcollier@notes.cc.sunysb.edu

**Postdoctoral Position
Purdue University, West Lafayette, Indiana
(Received 08/14)**

A postdoctoral position is available immediately to study the regulation of floral scent production in plants. The project will focus on investigation of the role of geranyl pyrophosphate (GPP), the key precursor of monoterpene biosynthesis, in the regulation of developmental and rhythmic emission of trans- β -ocimene and myrcene, the two major scent components of snapdragon scent. Familiarity with basic techniques of molecular biology and biochemistry is required. For a complete description of the research project, please see *Plant Cell* 12, 949-961, 2000; *Plant Cell* 13, 2333-2347, 2001; *Plant Physiology* 126, 956-964, 2001.

Application Instructions: Interested applicants should contact Dr. Natalia Dudareva, Purdue University, Department of Horticulture and Landscape Architecture, West Lafayette, IN 47907; phone 765-494-1325, fax 765-494-0391, e-mail dudareva@hort.purdue.edu.

Job Contact Email: dudareva@hort.purdue.edu

**Postdoctoral Position in Biochemistry
University of Nevada, Reno
(Received 08/14)**

Two postdoctoral positions are available for a period up to 4 years to analyze global gene and protein expression and global metabolite profiles in abiotically-stressed grapevines and transgenic grapevines. Send letter outlining research experience and interests, curriculum vitae, and arrange to have three letters of recommendation.

Application Instructions: Three letters of recommendation sent to: Dr. Grant R. Cramer, Department of Biochemistry/MS 200, University of Nevada, Reno, NV 89557-0014; tel 775-784-4204, fax 775-784-1650.

Related Web Site: <http://gcramer-mac.ag.unr.edu/index.html>

Job Contact Email: cramer@unr.edu

**Chloroplast Genomics of Dinoflagellates
University of British Columbia (this ad is being
reposted due to immigration requirements)
Vancouver, Canada
(Received 08/14)**

This postdoctoral position is to investigate the amazing minicircular chloroplast genes of dinoflagellate algae (Zhang et al. *Nature* 400: 155-159 (1999); *Mol Biol Evol* 19: 489-500 (2000)). Each of 12 genes discovered so far is on its own individual 2-3 kb minicircle. The non-coding region has conserved sequence blocks that are shared among all the genes of a species, but are completely different between species. Chimeric minicircles containing fragments of several genes indicate extensive recombinogenic activity and raise questions about the evolutionary origin of these minicircles. Since only a small number of the usual complement of chloroplast genes has been discovered in several *Heterocapsa* and *Amphidinium* species, one of our goals is to determine whether the missing genes are on larger DNA molecules (like most plastid genomes) or have been transferred to the nucleus. The ideal candidate for this position would have experience in molecular biology of an organelle (genetics, genomics or gene expression), or would have worked on problems concerning molecular evolution of photosynthetic eukaryotes. The basic requirements are a demonstrated mastery of molecular biological/biochemical techniques as demonstrated by publications, and a pioneering spirit! This project is guaranteed to generate some surprises (and publications in top journals), and should appeal to those who like to work off the beaten track. Actually, dinoflagellates are an important part of the marine biome. We are particularly interested in them because they are one of the groups of algae that acquired

chloroplasts by secondary endosymbiosis, i.e. by engulfing a red alga and retaining only its chloroplast, now surrounded by three or four membranes (see Ishida and Green, PNAS 99: 9294–9299, 2002). This position is available now, but could be commenced any time before the end of 2002. Salary will be commensurate with experience. UBC hires on the basis of merit and is committed to employment equity. We encourage all qualified persons to apply. However, Canadians and permanent residents of Canada will be given priority. Application deadline September 28, 2002.

Application Instructions: Please send resume and names of three references to Dr. Beverly R. Green, Botany Department, University of British Columbia, #3529-6270, University Boulevard, Vancouver, B.C., Canada, V6T 1Z4; telephone 1-604-822-2349 (lab -3613); fax 1-604-822-6089.

Related Web Site: <http://www.botany.ubc.ca/green.html>

Job Contact Email: brgreen@interchange.ubc.ca

**Postdoctoral Research Associate
University of Hawaii, Honolulu
(Received 08/14)**

We are searching for a creative individual as a postdoctoral scientist to study novel strategies for enhancing production of recombinant proteins in plant cell bioreactor cultures. In collaboration with Dr. Henrik Albert of USDA-ARS this NSF-funded project will involve investigation of cell-cycle control and GFP-fusion as means to enhance recombinant protein production in plant cell cultures. Additional information about the project can be found at <http://www.fastlane.nsf.gov/servlet/showaward?award=0126191>. Successful applicants should have a strong background in plant molecular biology and tissue culture, proven publication record, an earned Ph.D. in molecular biology, microbiology, or closely related fields, and strong written and oral communication skills. Research experience in plant cell cycle and/or GFP fusion would be a plus. Prior work experience in a cross-disciplinary research environment would be highly desirable. Salary is competitive and commensurate with experience. Position available immediately and pending adequate progress, funding is available for 2 years.

Application Instructions: E-mail a cover letter, a CV, and the names and addresses of three references to Dr. Wei Wen Su, Department of Molecular Biosciences & Bioengineering, University of Hawaii, 1955 East-West Road, Ag. Sci. 218, Honolulu, HI 96822; e-mail wsu@hawaii.edu.

Related Web Site: <http://www.ctahr.hawaii.edu/mbbe/su.html>; <http://www.ctahr.hawaii.edu/mbbe/albert.html>

Job Contact Email: wsu@hawaii.edu

**Postdoctoral Research Associate
University of Hawaii, Honolulu
(Received 08/14)**

We are searching for a creative individual to join our research team as a postdoctoral scientist to develop novel gene expression systems based on recombinant plant viruses. In this interdisciplinary project we will investigate new technologies for plant transfection in collaboration with Dr. Monto Kumagai at the University of Hawaii, a leading expert in plant viral vectors. Successful applicants should have demonstrated core molecular biology skills and a strong background in chemistry or biochemical engineering, proven publication record, an earned Ph.D. in molecular biology, microbiology, plant pathology, biochemical engineering, or closely related fields, and strong written and oral communication skills. Prior work experience in a cross-disciplinary research environment would be highly desirable. Starting salary is \$35,316 annually, plus benefits. Position available immediately and pending adequate progress, funding is available for 3 years.

Application Instructions: E-mail a cover letter, a CV, and the names and addresses of three references to Dr. Wei Wen Su, Department of Molecular Biosciences & Bioengineering, University of Hawaii, 1955 East-West Road, Ag. Sci. 218, Honolulu, HI 96822; e-mail wsu@hawaii.edu.

Related Web Site: <http://www.ctahr.hawaii.edu/mbbe/su.html>; <http://www.ctahr.hawaii.edu/mbbe/kumagai.htm>

Job Contact Email: wsu@hawaii.edu

**Postdoctoral Fellow
Plant Gene Expression Center, University of
California at Berkeley, Albany CA
(Received 08/16)**

A postdoctoral position, funded by the NSF Plant Genome Program, is available immediately.

Double fertilization was discovered over 100 years ago, but the molecular biology of this unique feature of the angiosperm life cycle is essentially unexplored. This project will provide tools to help answer many long-standing questions about gamete gene expression and gamete interactions. Examples include: Where and when are the mRNAs in sperm transcribed? Will plant gamete fusion use molecules similar to those mediating gamete fusions in animals or in yeast? Will differing molecules on the two sperm mediate preference for fusion partner (egg or central cell)? Will there be interspecific barriers that operate at the sperm-egg level? Will sperm RNAs delivered upon fusion have any impact on early zygote or endosperm development? In this project, cDNA libraries will be constructed from

isolated eggs and embryo sacs of maize (we already have an excellent cDNA library prepared from FACs-purified sperm). More than 5000 cDNAs from each library will be sequenced. Expression profiles for ~200 diverse cDNAs from each library will be determined using RT-PCR and whole mount in situ hybridization. Although purified gametes are not accessible from most plants, with information about maize gamete gene expression, comparative genomics can be used to identify and manipulate gamete-expressed genes in diverse plant species. Arabidopsis lines with fluorescently-tagged gametes will be constructed to facilitate analysis of mutants affected in gamete function, and to facilitate imaging of fertilization in vivo. Functional analyses will focus on genes predicted to encode surface-localized proteins that might mediate cellular interactions during fertilization.

Application Instructions: Applicants should have a strong background and publication record in molecular biology or a related field. Experience with plant biology or reproductive biology is not required; experience with in situ hybridizations is a plus. Salary range \$31,000–\$35,000/yr., depending on experience and track record.

Applicants should mail or email:

- 1) a cover letter describing experience
- 2) a CV including a list of publications and the names and email addresses of 3 references, to Sheila McCormick, Plant Gene Expression Center, 800 Buchanan St., Albany, CA 94710, sheilamc@nature.berkeley.edu.

Related Web Site: <http://www.pgec.usda.gov/McCormick/mclab.html>

Job Contact Email: sheilamc@nature.berkeley.edu

**Postdoctoral Research Associates
North Carolina State University, Raleigh
(Received 08/17)**

We seek highly qualified applicants to join a team of researchers working to improve plant transformation technology, with a particular focus on maize. Research projects may involve gene targeting, chromatin elements such as MARs and insulators, or other techniques to reduce position effects and gene silencing while improving gene transfer and enhancing stable and predictable gene expression. A PhD is required in a relevant biological discipline. The successful applicant will have strong molecular skills and a track record of peer-reviewed publication in chromatin structure, gene expression, cell/developmental biology, or plant transformation. Experience with plant systems is desirable, but not essential. Strong interpersonal skills and a willingness to learn and apply new techniques are important, as is the ability to work independently while functioning as part of a team.

Application Instructions: Please send applications, including a CV, statement of interest and contact information for at least three references, to Dr. William F. Thompson or Dr. George C. Allen, c/o Ms. Christine Brownfield, Department of Botany, Campus Box 7612, NC State University, Raleigh, NC 27695-7612. Email applications should be sent to christine_brownfield@ncsu.edu. North Carolina State University is an Equal Opportunity Employer. Individuals with disabilities desiring accommodations in the application process should contact Carol Apperson, Botany Department, carol_apperson@ncsu.edu, 919-513-3809.

Related Web Site: <http://www.cals.ncsu.edu/botany/>

Job Contact Email: george_allen@ncsu.edu

**Postdoctoral Researcher
University of California at Berkeley
(Received 08/19)**

Two postdoctoral positions are available in the laboratory of Dr. Athanasios Theologis at the Plant Gene Expression Center, ARS-USDA, University of California at Berkeley, to study molecular aspects of auxin signaling. The research of one position will focus on global mapping of the DNA binding sites of the auxin response factors (ARFs) using functional genomic technologies as well as molecular genetics approaches. The research of the second position will be on determining the in vivo combinatorial interactions of the Aux/IAA and ARF gene family members using molecular and cell biological approaches. A strong background in Molecular Biology and Protein Biochemistry is required. The appointments will be for two years. The positions require U.S. citizenship or permanent residency. The salary level will depend on the qualifications of the candidates. Starting date: January 1, 2003.

Deadline for applications: November 15, 2002.

Application Instructions: Please send a CV and your qualifications specifying for which position you are applying to: theo@nature.berkeley.edu as a Word attachment or text file. The University of California is an equal opportunity/affirmative action employer.

Related Web Site: http://plantbio.berkeley.edu/faculty/faculty_pages/Theologis.html

Job Contact Email: theo@nature.berkeley.edu

**Research Plant Molecular Biologist/Geneticist/
Biochemist (Plants)
USDA/ARS Western Wheat Quality Laboratory,
Pullman, Washington
(Received 08/20)**

Research objectives are to identify and characterize molecular and biochemical components of wheat endosperm relating to end-use quality. Topics include, but are not limited to: identification of potential genes/loci conferring the 'Super Soft' (SS) kernel trait and development of rapid methods to recognize these genes. Ph.D. in biochemistry, molecular biology, plant physiology, food science, genetics or a related field is required. Training and experience in molecular biology, genetics, plant transformation technology and/or enzyme biochemistry is desirable. Experience in molecular genetics of wheat end-use quality is beneficial. US Citizenship is required. Salary for this GS-11/12 position (\$45,285–\$58,867) will be based on qualifications and experience.

Application Instructions: For more information, contact Dr. Craig F. Morris, Western Wheat Quality Lab, Box 646394, E-202 FSHN East, WSU, Pullman, WA 99164-6394; 509/335-4062; fax 509/335-8573 or e-mail wwql@wsunix.wsu.edu. A résumé or curriculum vitae, with references, is acceptable for application and should be forwarded to Dr. Morris. This position remains open until filled. Candidates will be considered as applications are received. ARS is an Equal Opportunity Provider and Employer.

Related Web Site: <http://www.wsu.edu/~wwql>

Job Contact Email: wwql@wsunix.wsu.edu

**Postdoctoral Fellow
Rutgers University, Piscataway, New Jersey
(Received 08/20)**

Postdoctoral position available in maize functional genomics project. The goal of the project is to use the transposons of the Ac-Ds family as gene searchers to identify and isolate genes in the complex maize genome and as insertional mutagens to define their function (see Cowperthwaite et al. 2002 Plant 14: 713-726). Research will focus on analyzing selected transposition events in transgenic maize and placing engineered transposons 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.

Application Instructions: Please send curriculum vitae and the names and e-mail 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

Related Web Site: <http://mbclserver.rutgers.edu/~dooner/PGRPage.html>

Job Contact Email: dooner@waksman.rutgers.edu

**Postdoctoral in Metabolic Biochemistry and
Engineering
University of Florida, Gainesville
(Received 08/23)**

Postdoctoral positions are available December 1 (or at a mutually agreed later date) for up to three years. Candidates who do not expect to be available until summer 2003 are strongly encouraged to apply now; we can wait for the right person. Possible areas of work are (1) elucidating and engineering plant one-carbon and folate metabolism, or (2) metabolic engineering of accumulation of the osmoprotectant glycine betaine. Our recent articles can be found by searching for Hanson AD at <http://www.ncbi.nlm.nih.gov/entrez/query.fcgi>. A strong background in biochemistry is required. cDNA cloning experience is essential; experience in HPLC analysis of small molecules is desirable.

Application Instructions: Email curriculum vitae, cover letter describing research experience and professional goals, and names of three references to Dr. Andrew D. Hanson, Horticultural Sciences Dept., University of Florida at adha@mail.ifas.ufl.edu.

Related Web Site: <http://pmcb.ifas.ufl.edu>

Job Contact Email: adha@mail.ifas.ufl.edu

**Postdoctoral Researchers—
Plant-Fungal Genomics
Colorado State University/NC State University
Fort Collins, Colorado
(Received 08/25)**

Several Postdoctoral Positions are available to work on the recently funded NSF Plant Genome Program Project—The Alternaria-Brassicaceae Pathosystem as a Model for Necrotrophic Fungal-Plant Interactions. This project combines generation and annotation of a substantial set of ESTs from infected plant tissues, characterization of thousands of randomly generated and gene specific targeted fungal knockout mutants, and global transcriptional profiling of host response during fungal pathogenesis of multiple species found within the Brassicaceae plant family using full-genome Arabidopsis microarrays. The project

sites are at Colorado State University, Fort Collins, CO under the direction of Dr. Christopher Lawrence and at NC State University, Fungal Genomics Laboratory, Raleigh, NC under the direction of Dr. Thomas Mitchell. Applicants should have a solid background in molecular genetics, molecular biology, or a related field, and an excellent publication record. Experience with plant biology, fungal molecular biology, plant pathology, and/or microarray analysis of gene expression is highly desirable.

Application Instructions: Applicants should submit a cover letter describing experience, a CV, a list of publications, and the names of three references to Christopher Lawrence, Dept. of Bioagricultural Sciences and Pest Management, Colorado State University, Fort Collins, CO 80523-1177, Phone: 970-491-4297, Fax: 970-491-3862, E-mail: clawrenc@lamar.colostate.edu Those researchers desiring to be located at NC State should indicate so on their application materials and these will be forwarded to Thomas Mitchell.

Related Web Site: <http://alternaria.org>

Job Contact Email: clawrenc@lamar.colostate.edu

**Postdoctoral Fellow
University of North Carolina, Chapel Hill
(Received 08/29)**

Positions are available immediately to work on G protein-coupled signal transduction in *Arabidopsis* in two parallel teams. Members of one team require expertise in fluorescent resonance energy transfer and cellular imaging, but experience with *Arabidopsis* is unnecessary. Specifically, FRET between the alpha and beta subunits of the *Arabidopsis* heterotrimeric G protein will be utilized to analyze orphan plant receptors and G-protein coupled signaling throughout development. Members of the other team require experience with both *Arabidopsis* and molecular genetics. Projects in this area include the identification of physical and genetic interactors to G-protein signaling components. Pre-doctoral fellowships come with a competitive stipend. Postdoctoral applicants must have a Ph.D. in the biosciences and have excellent English communication skills.

Application Instructions: Send CV to alan_jones@unc.edu.

Related Web Site: <http://www.plantbiology.unc.edu>

Job Contact Email: alan_jones@unc.edu

**Postdoctoral Research Associates in
Root Genomics
University of Missouri, University of Illinois,
and Danforth Plant Science Center,
Columbia, Missouri
(Received 08/29)**

A Plant Root Genomics Consortium (<http://rootgenomics.missouri.edu>) was recently funded by NSF to study root genetics and physiology which includes scientists from the University of Missouri at Columbia (UMC), the Donald Danforth Plant Science Center at St. Louis, and the University of Illinois at Urbana-Champaign (UIUC). Our broad aim is to elucidate the role roots play in adaptation to drought conditions, and to transfer this knowledge to crop improvement through biotechnology. This work will focus on mechanisms of root growth maintenance and root to shoot signaling in maize under water deficit. Contact Henry Nguyen, project director, for information about the Plant Root Genomics Consortium; nguyenhenry@missouri.edu.

**Postdoctoral Fellow in Plant Physiology and
Biochemistry/Molecular Biology
University of Missouri, Columbia**

A position is available with a focus on the involvement of cell wall proteins in root growth maintenance under water deficits using both protein and gene profiling. The project will involve analysis of cell wall protein profiles and expression of cell wall protein genes in the root growth zone of maize lines differing in root growth response to water deficits. The individual will work closely with the postdocs to be appointed in proteomics and bioinformatics at the Danforth Center and other postdocs in gene profiling at UMC and UIUC. This project is a collaboration with Dr. Yajun Wu at Utah State University (yajunwu@mendel.usu.edu). Contact Robert Sharp for more information: sharp@missouri.edu.

**Postdoctoral Fellow in Molecular Biology/
Molecular Genetics,
University of Missouri, Columbia**

A position is available involving transcript profiling of specific root regions in contrasting maize lines under drought and investigation of the functions of genes associated with root growth and root signaling under drought. The person in this position will work closely with the post-docs to be appointed in the areas of genetic mapping, cell wall proteins and bioinformatics at UMC and the microarray team at UIUC. Contact Henry Nguyen for more information: nguyenhenry@missouri.edu.

**Postdoctoral Fellow in Molecular Genetics
University of Missouri, Columbia**

A position is available for mapping root- and drought-specific ESTs to the integrated genetic and physical map of maize and to investigate their associations with QTLs controlling root characteristics and drought tolerance in maize. Bioinformatics skill is a plus. Contact Georgia Davis for more information: davisge@missouri.edu.

**Postdoctoral Fellow in Bioinformatics
University of Missouri, Columbia**

A position is available in bioinformatics. Responsibilities include Web site management and integration of EST sequence, genetic mapping, transcript profile, proteomic and metabolite profile data. This person will work closely with researchers at UMC, Danforth Plant Science Center and UIUC to achieve a biologically relevant integration of the datasets. Skills in database design and query construction are essential. Knowledge of basic biology and genetics is helpful. Contact Gordon Springer for more information: springerg@missouri.edu.

**Postdoctoral Fellow in Molecular Biology/
Molecular Genetics
University of Illinois, Urbana-Champaign**

The position will involve generating root-specific, drought-specific cDNA libraries of selected maize genotypes, supervision of high-throughput transcript sequencing, and establishment of a project-specific unigene set. The main project for the fellow will be to conduct expression studies with microarrays utilizing specific regions of different maize varieties/segregating lines with phenotypic differences in root growth under drought conditions in collaboration with the physiology and molecular biology groups at UMC. Basic knowledge in bioinformatics will be helpful. Contact Hans Bohnert for more information: bohnert@life.uiuc.edu.

**Postdoctoral Fellow in Plant Physiology/
Molecular Biology
Donald Danforth Plant Science Center**

A position is available to work on root signaling under drought stress. The work will involve studying the components of long distance signaling via xylem sap in maize under drought and well-watered conditions. The work will involve whole plant physiology, molecular biology and metabolite analysis. In year two of the project the postdoc will work together as a team member with two other postdocs in the areas of proteomics and bioinformatics. Contact Daniel Schachtman for more information: dschachtman@danforthcenter.org.

Postdoctoral Fellow in Mass Spectrometry/ Proteomics

Donald Danforth Plant Science Center

A position is available to work on the role of roots under drought stress. The position requires an experienced mass spectrometrists with a strong background in proteomics. The successful candidate will be in close contact with all the different aspects of this root genomics project and work as a team member with two other postdoctoral fellows in the areas of Plant Physiology/Molecular Biology and Bioinformatics at the Donald Danforth Plant Science Center in St. Louis, MO and the cell wall protein post-doc at UMC. Contact Julia Gross for more information: jgross@danforthcenter.org.

Postdoctoral Fellow in Bioinformatics Donald Danforth Plant Science Center

A position is available in bioinformatics. The individual will focus on protein structure and function prediction. This fellow will work closely with the groups of Julia Gross and Daniel Schachtman to analyze data from the mass spectral analysis of proteins and metabolites. The individual will work closely with the cell wall protein post-doc and the bioinformatics team at the University of Missouri-Columbia to develop tools and combine data for the entire project. Contact Julia Gross or Daniel Schachtman for more information: jgross@danforthcenter.org; dschachtman@danforthcenter.org

POSITIONS ARE BUDGETED TO START IN OCTOBER 2002. THE GENETIC MAPPING POSITION IN GEORGIA DAVIS'S LAB AND THE MASS SPECTROMETRY/PROTEOMICS POSITION IN JULIA GROSS'S LAB, AS WELL AS THE BIOINFORMATICS POSITION AT THE DONALD DANFORTH PLANT SCIENCE CENTER, WILL BEGIN IN OCTOBER 2003.

Application Instructions: Contact the PIs by e-mail

Related Web Site: <http://rootgenomics.missouri.edu>

Job Contact Email: nguyenhenry@missouri.edu

FELLOWSHIPS/GRADUATE ASSISTANTSHIPS, ETC.

Graduate Assistant in Biochemistry University of Nevada, Reno (Received 08/14)

Two graduate research assistantships (Ph.D. level) are immediately available within the Department of Biochemistry, University of Nevada, Reno. The ideal candidate will be highly motivated to analyze global mRNA and protein expression and metabolite profiles in abiotically-

stressed grapevines and transgenic grapevines. The major goal of the research will be to analyze the function of stress-regulated genes affecting stress tolerance and wine quality. A practical outcome of this research will be the production of plants and wine with improved tolerance and quality. The successful candidate will have been admitted to the Biochemistry Department or the Cell and Molecular Biology graduate programs and have completed a B.S. or M.S. degree in Biochemistry, Plant Sciences, Botany, Microbiology, Biology or related fields. For information on graduate studies at the University of Nevada, Reno see <http://www.unr.edu/grad/>. Departmental research assistantship stipends start at \$16,000 (Ph.D.) per year with a tuition waiver.

Application Instructions: To apply, please submit a letter of interest, resume, undergraduate and graduate transcripts, GRE/TOEFL scores, and three letters of reference to Dr. Grant R. Cramer, Department of Biochemistry/MS200, University of Nevada, Reno, NV 89557-0014, USA; telephone 775-784-4204, fax 775-784-1650.

Related Web Site: <http://gcramer-mac.ag.unr.edu/index.html>

Job Contact Email: cramer@unr.edu

PhD student Institute of Plant Biochemistry, Halle/Saale, Germany (Received 08/19)

The Institute of Plant Biochemistry Halle, an institute of the Gottfried Wilhelm Leibniz Society, is seeking immediately a Doctoral Student (BAT-O IIa/2) to study the molecular basis of disease resistance in the model plant, *Arabidopsis thaliana*. The selected candidate will identify and characterize leucine-rich repeat receptor-like kinases (LRR-RLK) implicated in plant disease resistance against various microbial pathogens. The candidate should have a strong background in plant molecular biology/genetics and phytopathology. Knowledge on bioinformatics and protein biochemistry will be an asset. The position will be for two years with an option for another year.

Application Instructions: Individuals interested in the aforementioned position may submit their curriculum vitae and names of three references to Dr. Thorsten Nuernberger, Institute of Plant Biochemistry, Weinberg 3, D-06120 Halle/Saale, Germany; fax: +49 (0) 3 45 - 55 82 16 09, e-mail tnuernbe@ipb-halle.de.

For more details on our research programmes and on the institute visit our website: <http://www.ipb-halle.de/english/institute/institute.htm>

Related Web Site: <http://www.ipb-halle.de/english/institute/institute.htm>

Job Contact Email: tnuernbe@ipb-halle.de

Graduate Assistant Ohio University, Athens (Received 08/23)

Teaching assistantships at the Masters and PhD level are available to begin work immediately to study signal transduction relating to plants responses to gravity. The major goal of the research is to molecularly characterize a new group of gravitropic mutants and to clone the genes involved. The successful candidate will have been admitted to either the interdisciplinary Molecular and Cell Biology graduate program or the Environmental and Plant Biology graduate program at Ohio University. For more information or to apply contact Dr. Sarah Wyatt, Environmental and Plant Biology, Ohio University.

Application Instructions: To apply, submit a letter of interest, resume, GRE/TOEFL scores, undergraduate transcripts and three letters of reference to Dr. Sarah Wyatt, Environ. & Plant Biology, Ohio University, Athens, OH 45710; telephone: 740-593-1133; fax: 740-593-1130.

Related Web Site: <http://www.plantbio.ohiou.edu/epb/faculty/faculty/sew.htm>

Job Contact Email: wyatts@ohio.edu

GRADUATE RESEARCH ASSISTANTSHIPS

Grant Opportunities Fulbright-Aquitaine, Paris (Received 07/12)

We would like to announce the new Fulbright grants for 2003-2004 in the Aquitaine region of France, heart of the wine country. These grants are in the areas of Chemistry, Biology, and Wine Sciences.

Application Instructions: Please visit <http://www.cies.org> or contact areiss@iie.org for more information.

Related Web Site: <http://www.cies.org>

Pre- and Postdoctoral Fellowships University of North Carolina, Chapel Hill (Received 07/12)

Positions are available immediately to work on G protein-coupled signal transduction in *Arabidopsis* in two parallel teams. Members of one team require expertise in fluorescent resonance energy transfer and cellular imaging, but experience with *Arabidopsis* is unnecessary. Specifically, FRET between the alpha and beta subunits of the *Arabidopsis* heterotrimeric G protein will be utilized to analyze orphan plant receptors and G-protein coupled signaling throughout development. Members of the other team require experience with both *Arabidopsis* and molecular genetics. Projects in this area

include the identification of physical and genetic interactors to G-protein signaling components. Pre-doctoral fellowships come with a competitive stipend. Postdoctoral applicants must have a Ph.D. in the biosciences and have excellent English communication skills.

Application Instructions: Send curriculum vitae to alan_jones@unc.edu. Additional information is available at <http://www.plantbiology.unc.edu>

Related Web Site: <http://www.plantbiology.unc.edu>

**GRA-Comparative Functional Genomics
University of Missouri-Columbia
(Received 07/18)**

A graduate research assistantship is available to support graduate studies toward a Ph.D. degree at the University of Missouri-Columbia (MU). Research will be focused on comparative functional genomics of drought responses in soybean (*Glycine max*), *Medicago truncatula* and *Arabidopsis thaliana*. This is a collaborative project between the laboratories of Prof. Gary Stacey and Prof. Henry Nguyen. The University of Missouri offers excellent opportunities in Plant Biology through the Interdisciplinary Plant Group, the Genetics Area Program, and the Center for Soybean Genomics and Biotechnology. University of Missouri is an equal opportunity/ADA institution.

Application Instructions: Interested students should submit a statement of goal and research interest, a resume, GRE scores and college transcripts. Arrange for three reference letters and mail application materials to:

Dr. Henry T. Nguyen, Missouri Soybean Merchandising Council Endowed Professor of Genetics and Biotechnology, Department of Agronomy, 1-87 Agriculture Building, University of Missouri, Columbia, MO 65211. Tel: (573) 882-5494.

E-mail: nguyenhenry@missouri.edu.

Related Web Site: <http://psu.missouri.edu/nguyenlab/>

Job Contact Email: nguyenhenry@missouri.edu

**Graduate Research Assistant—
Soybean Genomics
University of Missouri-Columbia
(Received 07/18)**

Graduate research assistantships are available to support graduate studies toward a Ph.D. degree at the University of Missouri-Columbia in the area of structural and functional genomics of soybean. Research could be focused on functional genomics or genetic/physical mapping of

economically important traits in soybean. The University of Missouri offers excellent opportunities in Plant Biology through the Interdisciplinary Plant Group, the Genetics Area Program, and the Center for Soybean Genomics and Biotechnology. Application Instructions: Interested students should submit a statement of goal and research interest, a resume, GRE scores and college transcripts. Arrange for three reference letters and mail application materials to Dr. Henry T. Nguyen, Missouri Soybean Merchandising Council Endowed Professor of Genetics and Biotechnology, Department of Agronomy, 1-87 Agriculture Building, University of Missouri, Columbia, MO 65211; telephone 573-882-5494.

E-mail: nguyenhenry@missouri.edu.

University of Missouri is an equal opportunity/ADA institution.

Related Web Site: <http://www.psu.missouri.edu/nguyenlab>

Job Contact Email: nguyenhenry@missouri.edu

**Graduate Research Assistant—
Metabolic Engineering
University of Missouri-Columbia
(Received 07/18)**

Graduate research assistantships are available to support graduate studies toward a Ph.D. degree at the University of Missouri-Columbia (MU). Research will be focused on functional genomics and metabolic engineering of the phytosterol pathway or drought tolerance in soybean. The phytosterol project is an ongoing collaboration with Prof. David Nes, an expert on phytosterol biochemistry at Texas Tech University, and Dr. Zhanyuan Zhang, director of the Plant Transformation Laboratory at MU. The University of Missouri offers excellent opportunities in Plant Biology through the Interdisciplinary Plant Group and the Genetics Area Program.

Application Instructions: Interested students should submit a statement of goal and research interest, a resume, GRE scores and college transcripts. Arrange for three reference letters and mail application materials to Dr. Henry T. Nguyen, Missouri Soybean Merchandising Council Endowed Professor of Genetics and Biotechnology, Department of Agronomy, 1-87 Agriculture Building, University of Missouri, Columbia, MO 65211; telephone 573-882-5494, e-mail: nguyenhenry@missouri.edu. University of Missouri is an equal opportunity/ADA institution.

Related Web Site: <http://www.psu.missouri.edu/nguyenlab>

Job Contact Email: nguyenhenry@missouri.edu

**ASSISTANTSHIPS, FELLOWSHIPS,
INTERNSHIPS**

**Postdoctoral and Graduate Student Fellowships
University of North Carolina, Chapel Hill
(Repeat)**

See our ad under Postdoctoral Positions.

**Graduate Research Assistantships
Colorado State University, Fruita
(Repeat)**

Two M.S. graduate research assistantships are available at the Colorado State University, Agricultural Experiment Station, Western Colorado Research Center. Graduate students will have an opportunity to participate in establishing a new research project to develop sunflower into a rubber-producing crop for the U.S. This new project is a collaborative research effort among five institutions. One assistantship will focus on tissue culture of sunflower. The other assistantship will focus on latex extraction, purification, and determination. A new laboratory and graduate student office has been constructed to support this research, along with the purchase of new state-of-the-art laboratory equipment. Graduate students will have a unique opportunity to interact with graduate students at the participating institutions. With a B.S. degree, the half-time stipend is \$1125/month plus tuition. Positions are available immediately. Please send letter of application, resume, official transcripts, and names and addresses of three references, or for more information contact Dr. Calvin H. Pearson, Colorado State University, Western Colorado Research Center, 1910 L Road, Fruita, CO 81521; telephone 970-858-3629, fax 970-858-0461, e-mail calvin.pearson@colostate.edu.

**Graduate Research Assistantship
Louisiana State University, Baton Rouge
(Repeat)**

A graduate research assistantship is available for a student to work within the sugarcane improvement program. The major research focus initially is to develop molecular markers for use in the breeding program. A second phase will use these markers for marker assisted breeding. Other projects of interest to the candidate will be considered and developed through discussion with other members of the sugarcane improvement program. More information can be obtained by contacting Dr. Collins A. Kimbeng, Louisiana State University, Department of Agronomy, 104 M. B. Sturgis Hall, Baton Rouge, LA 70803; telephone 225-578-7577, fax 225-578-1403, e-mail ckimbeng@agctr.lsu.edu.

Postdoctoral and Graduate Student Fellowships
Université de Montréal, Canada
(Repeat)

See our ad under Postdoctoral Positions.

Graduate Assistantship
Iowa State University, Ames
(Repeat)

Assistantship available in the Department of Horticulture. Graduate degree program (MS or PhD). Possible research areas include: physiology, molecular biology and/or molecular genetics of

low temperature stress in plants. Some of the previous research has involved membrane alterations during freezing injury and recovery (*Plant Physiol.* 95: 846–852, 1991), physiological and molecular investigations of cold acclimation and dormancy in *planta* (*Plant Physiol.* 105: 95–101, 1994; *Physiol. Plantarum* 101: 8–16, 1997; *Physiol. Plantarum* 107: 98–109, 1999; *Theor. & Appl. Gen.* 99: 912–920, 1999). The specific research program of the successful candidate will evolve from discussions with the major professor. Candidates should possess a BS or MS in plant-related discipline such as horticulture, botany or

biology and have strong interest/expertise in plant physiology, biochemistry or molecular biology. Effective oral and written communication skills are desirable. Stipend pays \$14,500 (MS degree) and \$16,000 (PhD degree) annually. Position available in August 2002. Applications must be submitted as soon as possible. Contact and/or send resume with names and addresses of at least three references to Dr. Rajeev Arora, 139 Horticulture Hall, Iowa State University, Ames, IA 50011; telephone 515-294-0031, fax 515-294-0730, e-mail rarora@iastate.edu.



A Special Collection of Articles from *The Plant Cell*
 September 1999–January 2001

Plant Genomics: Emerging Tools

As we enter the new millennium, the age of genomics is in full swing. Much more than the study of individual genes and their functions, genomics implies the study of the interacting networks of genes, proteins, and metabolites that make up a whole organism. Large-scale genome sequencing projects form the base of all genomics studies, but radiating out from this base is a host of other tools that allow us to figure out the biology that is governed by DNA sequence.

Between September 1999 and January 2001, *The Plant Cell* published a series of articles on genomics technologies and

approaches specially written for the plant science community. These articles, together with a number of research papers on plant genomics published during this period, have been bound into a volume called *Plant Genomics: Emerging Tools*. This compilation provides readers interested in the applications of genomics to plant science with a single resource covering the most recent developments in this emerging field.

Plant Genomics: Emerging Tools
 ISBN 0-943088-42-9. Item 30044. Price \$25.00

For ordering information go to
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David E. Sadava, The Claremont Colleges, Claremont

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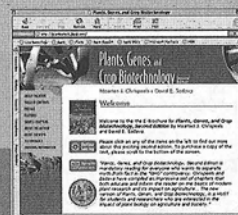
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Jones and Bartlett and the **American Society of Plant Biologists** have teamed up for the second edition of **Plants, Genes, and Crop Biotechnology**. This book integrates many fields to help students understand the complexity of the basic science that underlies crop and food production. It is truly an interdisciplinary text that brings together aspects of genetics and plant breeding, molecular biology and genetic engineering, plant development and reproduction, soils and plant nutrition, agro-ecology and the sustainability of agricultural practices, population increases and the difficulty of eradicating hunger, pest control practices and their environmental consequences, and the role of biotechnology in modern crop production. The orientation is not strictly towards American or even "Western" agriculture, as many examples are taken from the agricultural problems in developing countries.

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Botany: An Introduction to Plant Biology, Third Edition

James D. Mauseth, University of Texas, Austin

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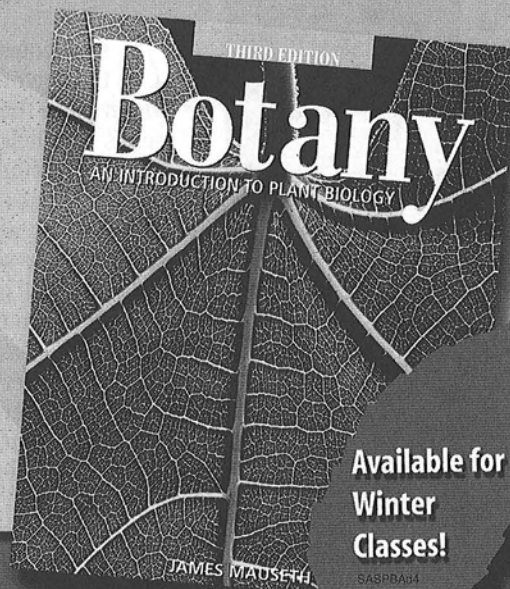
Will Publish: December 2002

Botany: An Introduction to Plant Biology, Third Edition provides a thorough overview of the fundamentals of botany. The topics and chapters are organized in a sequence that is easy to follow, beginning with the most familiar — structure — and proceeding to the less familiar — metabolism — then finishing with those topics that are probably the least familiar to most beginning students — genetics, evolution, the diversity of organisms, and ecology.

Botany: An Introduction to Plant Biology, Third Edition stresses three key principles:

- evolution by natural selection
- analysis of botanical phenomenon
- the diversity of structures and metabolisms

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American Society of Plant Biologists

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ASPB News

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



ASPB News (ISSN 1535-5489) is published bimonthly by the American Society of Plant Biologists, 15501 Monona Drive, Rockville, MD 20855-2768 USA, telephone 301-251-0560, fax 301-279-2996. Members' dues include a subscription price of \$2 per year to *ASPB News*. Subscription price to nonmembers is \$30 per year. Periodicals postage paid at Rockville, MD, and at additional mailing offices. Postmaster: Please send address changes to *ASPB News*, 15501 Monona Drive, Rockville, MD 20855-2768 USA.