

ASPB News



THE NEWSLETTER OF THE AMERICAN SOCIETY OF PLANT BIOLOGISTS

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President's Letter

One Community

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As I sit in my office, thinking about what I might write in my first President's Letter for the *ASPB News*, I realize that it is exactly one month since September 11, 2001. None of us will ever forget what we were doing when we heard the news. My sister called from New Jersey around 6:30 a.m. Arizona time as I was working on a lecture for the graduate-level course I would be teaching later that day. Her husband had called from New York City to say he was okay and headed back home to New Jersey. As he emerged from a train near the World Trade Center, he saw the first plane hit. Luckily for my family, he didn't stick around to see the second plane hit or the twin towers collapse. I immediately got off the phone and turned on the television. I knew my immediate family was safe, but I could not stop the surreal, nauseated feeling that overcame me and stayed for days. Somehow my daily tasks of preparing lectures, analyzing research data, and going to committee meetings seemed so trivial. Our university did not close that day, so I had to give my lecture and in many ways carry on as "normal."

But I was not normal. I moved through the next few days, as did many others, with complex feelings of immense sadness, horror, and disbelief. Today, a month later, the pain is a bit more distant, but I know I have changed. I am committed to not taking any aspect of my life for granted. I am also committed to putting more energy into all of my communities—my family, friends, neighbors, employees, students, colleagues, and fellow scientists within our country and around the world. As ASPB president, I want to encourage each and every one of you to do the same. In this letter I discuss ways you can put more energy into your science community.

One of the most important roles of a society is to mentor and promote its human resources. In the September/October issue of the *ASPB News*, in his last letter as president, Dan Cosgrove outlined many of our Society's achievements during the past year. As I was reviewing his list, I realized that most of our programs, such as undergraduate research opportunity fellowships, a new meeting on plant genetics planned for 2002, travel awards for graduate students, the hour-long film on the history of agriculture, and expanded outreach to the public and K-12, were initiated by members. These are clear examples of how just a few members can make a big difference. Our Society does many things well. Can we do better? You bet we can, especially if we all work together. The combination of committed, strong leadership with a proactive, conscientious membership is required to achieve substantial improvements. Please contact me with your thoughts on what we can do for you, and what you can do for your Society. I want to work with you to put your ideas into practice.

If you are reading this newsletter, you are most likely a member. Thank you and please do send in your renewal for 2002. It is now very easy to do via the web! As a member you have received information about the membership drive that is currently under way. You have received brochures that describe the benefits of membership, lists of members on your campus, and encouragement to recruit new members to our Society. One of the most obvious perks of membership is free online access to our excellent journals, *Plant Physiology* and *The Plant Cell*. For many at universities and companies, the libraries now make

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ASPB Officers & Staff

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ASPB News

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CALL FOR ABSTRACTS

PLANT BIOLOGY 2002

The Annual Meeting of the American Society of Plant Biologists

Saturday, August 3 to Wednesday, August 7, Denver, Colorado, USA

Deadline: Friday, March 1, 2002

Do not submit abstracts before February 1, 2002.

The program format for the 2002 annual meeting will include five major symposia, 24 minisymposia selected primarily from the submitted poster abstracts, a limited number of "one overhead" poster talks, and poster presentations. All posters will be on display for four days. **Authors should submit their abstracts in one of the 47 poster categories. The Program Committee will also use these abstracts as a basis for composing the 24 minisymposia. These categories are listed on the reverse side of this call for abstracts.** All minisymposia presentations will require a PowerPoint Presentation format. Suggestions or proposals for any additional minisymposium topics should be sent to Susan Chambers Rosenberry, chambers@aspb.org, or Plant Biology 2002, 15501 Monona Dr., Rockville, MD 20855 USA.

Abstracts to Be Submitted and Viewed Electronically for Plant Biology 2002

For Plant Biology 2002, abstracts should be submitted via the World Wide Web, and the annual abstract supplement will be available for viewing and searching on the Web beginning in April 2002. We will also publish a printed version of the abstract supplement in 2002 that will be available to attendees at the meeting.

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

The deadline for submission is Friday, March 1, 2002. Abstracts may not be submitted before Thursday, February 1, 2002.

This system will work best for members who have access to the World Wide Web through a forms-capable Web browser. We strongly recommend Netscape or MS Internet Explorer, version 5.0 or higher. We will include links at the site to immediately download the latest version of these two browsers.

For all abstract submissions, authors will be strictly limited to 1800 characters in the body of the abstract.

An automatic e-mail acknowledgment will be sent to all who submit abstracts.

On the reverse of this page are the new instructions for submitting your abstracts electronically. For this electronic submission project to work effectively, it is critical that you read and follow these new instructions carefully when you send your abstract for Plant Biology 2002. If you have any questions, contact Susan Chambers Rosenberry at chambers@aspb.org or 301-251-0560, ext. 111.

Remember the following guidelines:

- Limit the body of your abstract to 1800 characters.
- Do not submit any abstracts before February 1, 2002.
- Be sure to submit by Friday, March 1, 2002.
- Do not use fax or mail.
- A \$50 fee will be required for each abstract (can be credited to registration fee or refunded if canceled by May 15, 2002.)

FOLLOW THE INSTRUCTIONS EXACTLY.

Call for Abstracts—Plant Biology 2002

2002 ASPB Annual Meeting

Denver, Colorado, USA, Saturday, August 3 to Wednesday, August 7

HOW TO SUBMIT AN ABSTRACT TO PLANT BIOLOGY 2002

Submitting Abstracts Via the World Wide Web

1. Select a poster presentation report category from the list below. A member may submit or sponsor one research poster abstract and one education poster abstract.
2. A US \$50 fee will be required when submitting each abstract. This fee can then be credited to the presenter's registration fee when registering for the meeting, or refunded if abstract cancellation occurs by the May 15, 2002, deadline.
3. A member may request that an abstract also be considered for a selected minisymposium category (optional) or a "one overhead" poster talk (optional).
4. Deadline for receipt is Friday, March 1, 2002. DO NOT USE FAX OR MAIL.
5. DO NOT include any graphics or tabular material in the body of your abstract.
6. Access URL <http://www.aspb.org/abstract/>. You must have a forms-capable browser (for example, Netscape 5.0 or higher or Internet Explorer).
7. Detailed instructions will be provided on the screen. Enter the information called for in each field. If you use special characters (superscripts or subscripts, italics, bold, or Greek letters), you will be asked to enter some simple text mark-up codes. The codes will be provided in the instructions on the screen. Those with Internet browsers 5.0 or higher have more automated functions for inserting the characters. The system will provide an immediate proofing copy to ascertain that you have entered the codes properly. The system will count the characters (minus the codes) and will not permit you to enter an abstract of more than 1800 characters.
8. After proofing, press the "Submit" button. Acknowledgment will be sent to you by e-mail.

The meeting format for Plant Biology 2002 will include poster presentations, a limited number of "one overhead" poster talks, and minisymposia. All abstracts must be submitted as poster presentations in one of the following 47 poster session categories. The Program Committee will then review the poster abstract submissions and select a limited number of abstracts to compose up to 24 minisymposia as well as the limited poster talks. If you wish to have your abstract considered for a minisymposium presentation or a poster talk, please select either option on the form. If your abstract is chosen by the Program Committee for a minisymposium presentation poster talk, you will be contacted before April 1, 2002.

POSTER PRESENTATION REPORT CATEGORIES

Comparative Genomics	Senescence
Functional Genomics	Root Biology
Proteomics	Vascular Development
Bioinformatics	Seed Biology
Transcriptional Regulation	Evolution of Physiological Processes
Posttranscriptional Regulation	Photomorphogenesis
Gene Silencing	Tropisms
Tropospheric Ozone	Hormones
Global Change	Clocks
Whole Plant Water Relations	Plant-Insect/Nematode Interactions
Cellular Water Relations	Plant-Pathogen/Symbiont Interactions
Salinity	Photosynthesis
Organelle Biogenesis	Oxidative Stress
Organelle Signaling	Temperature Stress
Cell Cycle	Heavy Metals
Cytoskeleton	Lipids & Related Molecules
Phloem Function	Secondary Metabolism
Membrane Transport	Enzymology
Cell Walls	Metabolic Engineering
Evolution of Developmental Processes	Metabolite Signaling
Developmental Patterning	Intercellular Signaling
Flower Development	Intracellular Signaling
Fruit Development	Emerging Technologies
Pollination Biology	

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

DEADLINE FOR SUBMISSION: FRIDAY, MARCH 1, 2002. DO NOT SUBMIT BEFORE FEBRUARY 1, 2002.

many journals, including ours, freely available online. Thus, this obvious advantage of membership is less compelling for many. So why should you remain a member? Why should you encourage others to join our Society? In our materialistic world the chance to win a free trip to Hawaii for the 2003 annual meeting might be a good incentive. However, I would like to hark back to other times and encourage you to maintain your membership and help us expand membership even though there may be no obvious material gain for you. I believe every plant scientist should care about and contribute to the health of our field. Is this because I am a child of the sixties? Maybe, but in these times, it is more important than ever to have the social and political connections that membership and participation in our Society enable. We can no longer afford to live and work in ivory towers. We need each other to continue to make headway for plant science funding and to ensure that decisions made on biotechnology are based on science, not irrational fears. The larger our numbers, the more political clout

we have. It is especially important to recruit young people, as they are the vitality of any society and will be our future leaders. Those of us who have been practicing science for many years fully appreciate the value of networking. We need to impress upon our younger colleagues how crucial networking is for the continued development of their careers. The Society offers numerous venues for networking, including the web, the annual meeting, other meetings, and service on committees. I am sure we can do more. Let me hear what you think. I believe that increasing our membership is of paramount importance, and I challenge every member to reach out and recruit one additional person to our Society. I will report back to you in my next letter how successfully you all met this challenge.

In his final letter as president, Dan Cosgrove spoke about the tension between different "camps" in our Society and reminded us that there is more that unites us in our goals than separates us. I agree wholeheartedly. ASPB's primary mission is to advance research, education, and outreach in the plant sciences to the benefit of society.

That is a very broad mission for a diverse group of scientists, a society composed of nearly 6,000 members from academia, government, and industry. We live and work in 65 countries. We are administrators, teachers, researchers, and students. We are trained as (in alphabetical order) agronomists, biochemists, cell biologists, developmental biologists, ecologists, entomologists, evolutionary biologists, geneticists, genomicists, molecular biologists, pathologists, and physiologists. (My apologies if I have left out an area of expertise.) Also in this age of multi-disciplinary science, many of us wear multiple hats and are not so easily pigeonholed by one descriptor. We can choose to focus on our differences, or we can choose to build on our common goals. My intention in the coming year is to concentrate on the positive things that we (myself, and all of you) can do to ensure that our Society continues its mission to the fullest extent possible. ♣

Vicki Chandler
University of Arizona
chandler@Ag.arizona.edu

Webmaster Makes It to *U.S. News & World Report*

ASPB's webmaster, Wendy Sahli, was recently quoted in a *U.S. News & World Report* story on online education. ASPB members who have considered taking



or teaching courses online will be interested in reading this special education issue, which explores the expanding role of e-education. Wendy's half-page photo on page 50 of the October 15, 2001, issue was taken in her office at ASPB headquarters.

For the past 10 years, Wendy has experienced almost all forms of long-distance education, from cable television courses to video to the current Internet education format.

Wendy had previously worked with *U.S. News & World Report* and is currently working on completing her degree as an e-student at the University of Maryland University College. As a student who likes to ask lots of questions, she appreciates being able to query her instructors, as often as necessary, by e-mail.

As our webmaster, Wendy invites any members with questions about the e-education process to send her an e-mail (wendys@aspb.org). Of special interest to those who have considered taking e-courses, this issue of *U.S. News & World Report* contains a listing of the "Best of the Online Grad Programs." This and other articles on e-education can be viewed at www.usnews.com. ♣

New Member Benefit! Article-at-a-Time® Publishing

"*Plant Physiology Preview*" and "*Plant Cell Preview*" both debut this fall. Once a week, batches of articles will be posted online, shaving up to four weeks off the publication process. Articles will be posted once authors have reviewed proofs and their corrections have been completed. The official publication date will be the date the paper first appears online. Preview articles will be superseded and suppressed by the final online articles, which will continue to be posted before the printed publications mail. Preview articles will be watermarked to distinguish them from final posted articles and will be archived.

Access to Preview papers is provided to Society members only.

ASPB Officers Assume Posts for 2001-2002

New ASPB officers and committee members assumed their responsibilities October 1. Vicki Chandler, University of Arizona, became president; Dan Bush, University of Illinois, became president-elect; Dan Cosgrove, Penn State University, became immediate past president; and Roger P. Hangarter, Indiana University, was elected secretary. Adrienne Clarke, University of Melbourne, became an elected member of the Executive Committee.

Following is a list of committee members for 2001-2002 as announced by Vicki Chandler:

Board of Trustees

Kenneth Keegstra (02), chair
Wendy F. Boss (03)
Mark Brodl (03), treasurer
Lou Sherman (04)
John Lisack, Jr., ex officio

Publications Committee

Krishna K. Niyogi (02), chair
Rebecca Chasan (03)
Douglas R. Cook (04)
Sarah M. Assmann (05)
Robert L. Fischer (06)

Program Committee

Roger P. Hangarter (03), chair, secretary
Daniel R. Bush (02), president-elect
Patricia Springer (03)
Richard A. Jorgensen (02)
W. J. Lucas (03)

Richard Amasino (04)
Stephen Patrick Long (05)

Nominating Committee

Dan Bush (04), ex officio, president-elect, chair
Vicki Chandler (03), ex officio, president, chair
Daniel J. Cosgrove (02), ex officio, past president

Education Committee

Eric Davies (02), chair
Gary Kuleck (02)
Kenneth D. Nadler (03)
Lawrence R. Griffing (05)
Sheila Anne Blackman (05)

Constitution & Bylaws Committee

Joe Chappell (03), chair
Mark Jacobs (02)
Jan A. D. Zeevaart (04)

Women in Plant Biology Committee

Elizabeth Hood (02), chair
F. C. Guinel-Jefferson (02)
Patricia Okubara (03)
Brian A. Larkins (03)
Kan Wang (04)
Mary L. Tierney (04)

Committee on Public Affairs

Peggy G. Lemaux (02), chair
Daniel J. Cosgrove (02) ex officio, past president

Anthony J. Cavalieri (02)
Robert T. Leonard (02)
Thomas D. Sharkey (03)
Roger W. Innes (03)
Barry A. Palevitz (04)
James N. Siedow (04)
Daphne Preuss (05)

Membership Committee

APPOINTED

Dina Mandoli (04), chair
Edgar Spalding (03)
Jeffrey E. Habben (02)

SECTION REPRESENTATIVES

Joyce G. Foster (02)
Dina Mandoli (acting) (04)
Carol Reiss (03)
Steve Rodermel (04)

Minority Affairs Committee

Robert Louis Vellanoweth (03), chair
C. S. Prakash (02)
Regina S. McClinton (02)
Sabeeha Merchant (03)
Peter Hepler (04)
William R. Gordon (04)

International Committee

Bob Buchanan (02), chair
Deborah Delmer (02), ex officio, past president
Arun Goyal (02)
Tuan-Hua David Ho (03)
Jean-Claude Kader (02)
Kenzo Nakamura (03)
Graciela Salerno (03)

Important Dates 2002

March 2-4

Southern Section/ASPB meeting at Georgia Center for Continuing Education
University of Georgia Campus
Contact Ruth Grene at ralischer@vt.edu

March 15-16

Midwest Section/ASPB meeting at Marcum Conference Center
Miami University, Oxford, Ohio
Contact John Z. Kiss at kissjz@muohio.edu. See also the Midwest Section home page at http://www.aspb.org/committees_societies/midwestern/index.cfm.

2001–2002 Awards Committees

Following is a list of the membership of the ASPB awards committees for 2001–2002, as announced by President Vicki Chandler. Members serve for three award cycles unless otherwise noted.

Corresponding Membership

(Four-Year Terms)

Tuan-Hua David Ho (04), chair

Raymond Chollet (02)

Candace H. Haigler (03)

Jan A. D. Zeevaart (03)

Michael B. Jackson (05)

Charles Reid Barnes Life Membership

Anthony Bleecker (02), chair

Thomas K. Hodges (02)

Janet Braam (03)

Douglas D. Randall (04)

Thomas Bjorkman (02), past winner

Stephen Hales Prize

Joanne Chory (04), chair

Mary Kay Walker-Simmons (03)

Gary M. Gardner (04)

Maarten J Chrispeels (06)

Jan A. D. Zeevaart (02), past winner

Charles F. Kettering Award

Steven M. Theg (03), chair

Donald A Bryant (02)

Archie R. Portis (04)

Christine Foyer (04)

Gayle Lamppa (06)

Charles Albert Shull Award

John Whitmarsh (02), chair

John Mullet (04)

Sarah Hake (05)

Jeffrey Dangl (05)

Detlef Weigel (03), past winner

Martin Gibbs Medal

Susan R. Wessler (04), chair

Heven Sze (02)

Ilya Raskin (05)

Mary Lou Guerinot (05)

Kenneth A. Feldmann (03), past winner

Adolph E. Gude, Jr. Award

Howard Grimes, chair (03)

Deborah Delmer (06)

Andrew D. Hanson (07)

Louise Anderson (08)

Gary Toenniessen (04), past winner

Dennis R. Hoagland Award

Roger N. Beachy (03), chair, past winner

Lawrence Rappaport (03)

Thomas D. Sharkey (05)

Donald R. McCarty (06)

Niels C. Nielsen (06)

Excellence in Teaching Award

Mark R. Brodl (02), chair

Donna Fernandez (06)

Anita S. Klein (06)

Deborah K. Canington (06)

Jonathan D. Monroe (03), past winner

Best Plant Biology Paper of the Year: Call for Nominations

Each year *Plant Physiology* and *The Plant Cell* sponsor the Young Scientist's Best Plant Biology Paper-of-the-Year Award. The award winners for 2001 were Thomas Girke, for his article in the December 2000 issue of *Plant Physiology* entitled "Microarray Analysis of Developing Arabidopsis Seeds," and Henri Batoko, for his article in the November 2000 issue of *The Plant Cell* entitled "A Rab1 GTPase Is Required for Transport between the Endoplasmic Reticulum and Golgi Apparatus and for Normal Golgi Movement in Plants."

The winning papers (one from each journal) will be selected by a committee of editors from nominations that are submitted by the editorial boards of *Plant Physiology* and *The Plant Cell*, the reviewers of papers, or others familiar with the scientific content of the paper. Letters of nomination are not

to exceed two pages and should describe the research, its significance, and the role that the first author (the nominee) played in the discovery process. Articles must have been published during the previous calendar year. Papers that show truly novel mechanistic or conceptual insights at any level of biological complexity, from the molecular to the whole plant, will be considered. Six copies of the nominating letter and six copies of the paper should be sent to the editor-in-chief of the journal for which it is being nominated. The deadline for submission will be February 15, and the selection will be made in March. The winners will be announced in the *ASPB News* and in each of the journals, as well as in the program of the annual meeting. The winners will be the first authors of each paper and, to qualify, must be a graduate student or postdoc at the time the work was per-

formed or the papers were written. If two authors contribute equally and their publication is chosen for an award, the prize will be split between the two. For scientists not on a traditional career track, five years of professional work post-Ph.D. will be the cutoff for consideration.

The awards will each consist of a \$1,000 cash prize and a subsidy of up to \$1,500 to attend the annual meeting the year of the awards. The ASPB Program Committee will schedule an appropriate minisymposium at the annual meeting that will feature presentations by the award recipients. The winners and their presentations will be highlighted in the program. ❧

Tornado Hits Beltsville Agricultural Research Center

Late Monday afternoon, September 24, 2001, an F3 tornado caused severe damage to the USDA Agricultural Research Center in Beltsville, Maryland. Fortunately, no one was killed or injured as the high winds scoured shingles off roofs and blasted them into buildings and greenhouses. Most of the beautiful old trees on campus were toppled, many onto vehicles parked nearby. Damage to physical structures is estimated at \$25 million. This assessment does not include damage to personal vehicles or loss of greenhouse and laboratory equipment or contents. Power lines were down across a large stretch of the main road in front of the center, blocking access and resulting in a 48-hour power outage. Although some buildings have back-up generators, in one case the generator could not be turned on because chemical spills within the building created a hazard. Many of the greenhouses suffered structural damage in addition to losing most of their glass. Twenty government vehicles were totally destroyed and 85 others damaged.

This storm was the same one that killed two young women at the University of Maryland in College Park and caused considerable damage to that campus. In contrast to areas of the

country where tornadoes are expected, there was no civil defense siren sounded and many people had no idea that a tornado was in the area. I happened to be listening to the radio and heard the warning for the College Park area, which is several miles down the road. I could see the storm approaching from my lab window. Unlike what I had seen of tornado weather in Indiana many years ago as a graduate student, the whole sky to the south was a swirling black cloud heading our way. It passed over very quickly, but the amount

of destruction left many of us stunned. The doors in front and back of my building had blown out, and there were glass shards, shingles, and pieces of trees everywhere. Every car in the parking lot had windows shattered; many could not be driven. It is very surprising that no one was hurt.

Janet P. Slovin
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A construction trailer was demolished when it slammed into nearby greenhouses.



The clocks, grills, and copper roof were torn off a well-known Ag Center landmark.



Winds were powerful enough to overturn a truck outfitted with expensive remote sensing equipment.

The Bioethics Imperative IV

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

Scenario: In your lab meeting, the structure of plant genomes was raised. In particular, the discussion included the current estimate that more than 50 percent of the corn genome is similar in sequence to retrotransposons. The data linking retrotransposons and oncogenes was briefly explained. “So,” asked an undergraduate as we walked away from lab meeting, “will I get cancer from eating corn?”

I have opined that bioethical discussions between scientists and their students and scientists and the public have been “mokita” (The Bioethics Imperative II, *ASPB News*, July/Aug 2001). However, the scene in the grocery store (The Bioethics Imperative III, *ASPB News*, September/October 2001) and the scene just described share two important other features: Learning often entails *unlearning* something else, and integrating new learning in a logical and meaningful fashion into what one already knows requires active and continuous logical analysis.

The woman in the grocery store needed to understand the terms “cloning” and “clone” before she could develop a personally meaningful stance on the food she wanted to feed her family. In the present scenario, the student either did not know or did not bring to bear his knowledge of the digestive tract; otherwise, logic would have steered him away from asking this question. It also became clear that he did not know that cancer is best thought of as a collection of diseases that begin and progress differently from each other in distinct tissues of the body. In sum, neither person had enough knowledge to even begin to formulate a well-considered “360 degree”—that is, a bioethical—stance on the topic.

Developing a bioethical stance also challenges our ability to dispassionately learn because we have to confront our own biases in the process. Goodness knows that people do not become scientists because they are all extroverts who are really great at dealing with tricky interpersonal interactions! Fortunately, the skills needed are learnable and teachable.


Following my argument, perhaps groups devoting themselves to opposing genetic engineering are now viable for all three reasons: Because the kind of real learning needed is tough to do, because discussions between scientists and the public have been *mokita* or just too time-consuming, and because every-

one involved has to deal with his or her own biases (cultural, personal, and otherwise) to initiate the discussion. Through my bioethics discussions in classes and in the grocery store (!), I have become convinced that we can no longer afford the chasm between the public and ourselves to remain as deep or as unexplored as it has become.

Next issue: Ethics in data management... postponed from this issue.

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If Only Corn Had Ears

by Talos

“Please help me!!!” was the gripping title of JaGiacomo’s e-mail to me. My imagination soared. A beautiful Italian heiress held captive by terrorists? I envisaged her slipping through the bathroom window, crab-walking along the eaves of her villa, climbing in through the study window and with pounding heart, anxiously sending her desperate missive into the cyber-ether. But why to Talos? And who was JaGiacomo? I was intrigued. I decided to open her letter.

“Hi!! I am an 8th grader. My friend and I are continuing our project from last year. I am having trouble finding anything on this subject. Does music stimulate plant’s growth?? If you know any thing please tell me. Thanks a million, Jane.”

Not quite the maiden or the predicament that Talos imagined, but a maiden in distress nonetheless! I began to respond to her with the facts as I know them: Plants have neither ears nor brains nor consciousness. Therefore, I argued with penetrating logic, it is quite unlikely that they have any sense of musical appreciation. Although I am much more at home in dusty archives, I decided out of curiosity to consult the modern world’s font of misinformation, the Internet, to see what it could contribute to this topic. What a shameful ignoramus Talos was revealed to be! According to a book by the academician Alexander Dubrov, plants not only are conscious, they have an appreciation of music (http://apdubrov.inc.ru/mus_plant.html). Another web site (www.lovely.clara.net/crop_circle_sound2.html) explains how extremely loud sounds may be responsible for the crop circles that have mysteriously appeared in wheat fields throughout the world. For those with more applied interests, a company called Sonic

Bloom (<http://www.sonicbloom.com/products.htm>) sells musical tapes that have been proven to increase yields dramatically. According to Sonic Bloom’s online brochure, their Home & Garden Kit “contains everything for the home garden enthusiast to start and grow any size garden. It contains a cassette tape with classical music on one side and a professional whistler on the other. The special Sonic Bloom sound frequency is embedded behind the music. It also contains a generous amount of the special Sonic Bloom organic nutrients.” Oh, the things they neglect to teach us in graduate school!

I also discovered that there are scores of students like Ms. Giacomo who are desperate for any information relating to the effects of music on plants. There is even a pedagogical web site by Professor Ross Koning, who, apparently besieged with such requests, implores middle and high school teachers to dissuade their charges from undertaking such scientifically dubious projects (<http://koning.ecsu.ctstateu.edu/music>).

Therefore, as a service to all the Jane Giacomas and Ross Konings in the world, Talos has appended an annotated bibliography of some of the published reports pertaining to the effects of music on plants. My overall impression from reading this literature is that plants are rather deaf, only responding to sounds greater than 100 db. It is sad to think that the only sound they may hear in their entire lifetime is the approaching lawnmower.

Talos is also seeking investors for a new invention. The idea is simple: If plants can appreciate music, then certainly they can appreciate lyrics. My plan is to produce an endlessly looping recording of George Harrison’s “Here Comes the Sun.”

Here comes the sun, here comes the sun,
and I say it’s all right

Little darling, it’s been a long cold lonely
winter

Little darling, it feels like years since it’s
been here
Here comes the sun, here comes the sun
and I say it’s all right

Little darling, the smiles returning to the
faces

Little darling, it seems like years since
it’s been here

Here comes the sun, here comes the sun
and I say it’s all right

Sun, sun, sun, here it comes . . .

Little darling, I feel that ice is slowly
melting

Little darling, it seems like years since
it’s been clear

Here comes the sun, here comes the sun,
and I say it’s all right

It’s all right

As scientific evidence that my proposed recording will stimulate the growth of plants, I cite the fact that a former upstairs neighbor of mine also endlessly played Beatles music and, up until his arrest, his apartment was *full* of luxuriant plants. Of course, I would never sully the good name of Talos by associating it with such a pseudoscientific product, but if the money is right, I suppose I could think of a good pseudonym. ❧

Annotated Bibliography

Braam J., and Davis R. W. (1990) Rain-induced, wind-induced, and touch-induced expression of calmodulin and calmodulin-related genes in Arabidopsis. *Cell* 60: 357–364 (Talking Heads music at 60 db for 1 minute (this is a party?) did not induce expression of touch-sensitive genes in Arabidopsis.)

Daedalus (1991) Green music. *Nature* 351:104 (My dear old mentor explains rather fancifully how music might be used as an herbicide. Claims that Charles

Darwin played the bassoon for *Mimosa pudica*.)

Davies R., and Scott P. (2000) Groovy plants: The influence of music on germinating seedlings and seedling growth. *J Exp Bot* 51:73 (A sketchy abstract that concludes that music does make seedlings grow faster, but the response is quite species specific.)
Subramanian S., et al. (1969) A study of the effect of music on the growth and yield of

paddy. *Madras Agr J* 56: 510–516 (Paddy is indifferent to daily 30-minute exposures to recorded South Indian oboe music. A good source to find many relevant abstracts by Indian researchers from the 1950s and 1960s.)

Weinberger P., and Measures, M. (1979) Effects of the intensity of audible sound on the growth and development of Rideau winter wheat. *Can J Bot* 57: 1036–1039

(A variety of sounds at 90 dB had little effect on Rideau winter wheat, but the plants subjected to 105–120 dB showed reduced growth, and 3 percent of them showed growth abnormalities in the third emergent leaf. Includes references to earlier Canadian studies.)



Foothills Footnotes

Sunflower Memorial

At the end of summer it is exceptionally dry along the front range of the Rocky Mountains in eastern Colorado. The nearby reservoir I often run around has shrunk to perhaps half its early summer size. The resident great blue heron and belted kingfisher that I greeted there every morning through July and August have moved on in search of better fishing holes. The foothills are dry and brown. But all is not lost; the sunflowers are in bloom.

As a general rule I don't much care for yellow flowers; yellow has never been one of my favorite colors. I don't have any yellow flowers in my garden. I certainly have not cared for the stylized sunflower motifs that are popular on everything from coffee mugs to wallpaper. But the real thing, growing tall along dusty brown roadsides and rocky footpaths in early September—now here is a true gem. The large, bright yellow flowers have an almost regal presence against the barren landscape and big blue western sky.

The sunflower, *Helianthus annuus*, is a native of North America and is believed to have been domesticated from wild sunflower in what is now the western United States around 3000 B.C. Today wild sunflowers can be found in almost every region of the United States and thrive in many different soil types, given adequate drainage and sunlight. The sunflower was first introduced into Europe



N. Eckardt

by Spanish explorers around 1510, and it was widely used as an ornamental plant. It reached Russia in the 1800s, and Russian plant breeders began improving it as a food crop. By 1830, sunflower oil was being commercially manufactured in Russia, and it apparently increased in popularity when the Russian Orthodox Church left it off the list of foods prohibited during Lent. Russian immigrants brought the domestic sunflower back to America in the mid- to late 1800s. A favorite variety, the mammoth Russian sunflower, was first listed in American seed catalogs in 1880.

The sunflower is often seen as a symbol of constancy and loyalty, because the flower constantly turns its head to follow the sun. In Greek legend, the sun-god Helios was beloved by a mortal named Clytie. When Helios was drowned, Clytie died of a broken heart. She became "rooted" in her grief, with her gaze forever turning to follow her beloved's daily journey across the sky.

Sunflower was a common crop, and sometimes a sacred food, among Native American tribes throughout North America, and was also highly valued by the Aztec and Inca Indians farther south in Mexico and South America. The Plains Indians of North America placed bowls of sunflower seeds on graves to nourish the dead on their long journey to the happy hunting grounds. Incan and Aztec priestesses wore or carried large sunflower disks made of gold, and pure gold sunflower effigies adorned their temples.

In the aftermath of September 11, I often found myself gazing out my office window, unable to concentrate on work. My eyes were drawn to a magnificent blooming sunflower in my neighbor's garden. One day I read in the paper that a local man had organized a tree-planting ceremony as a living memorial to those who lost their lives in America that day. I decided I would plant my own small memorial: a bed of sunflowers to honor the victims who died at the World Trade Center and the Pentagon, and on a hillside in Pennsylvania, and as a fitting symbol of the constancy of the American spirit that will remain alive as long as spring turns into summer and sunflowers bloom across the land. ♣

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House Seeks New Competitive Grants Program Supporting Plant Biotechnology Research

Among the amendments to the farm bill approved by the House in the first week of October was one that would provide competitively awarded research grants for research in the area of plant biotechnology and other areas of agricultural biotechnology.

Representative Eddie Bernice Johnson (D-TX), who several ASPB members have testified before (including most recently Charles Arntzen as well as Vicki Chandler, Daphne Preuss, Ken Keegstra, Jim Cook, Mike Thomashow, and John Ryals) gained passage of her amendment to establish a merit-reviewed, competitive grants program for research and development of agricultural biotechnology for the developing world in order to—

- enhance the nutritional content of agricultural products that can be grown in the developing world to address malnutrition

- increase the yield and safety of agricultural products that can be grown in the developing world

- increase the yield of agricultural products that can be grown in the developing world that are drought resistant and stress resistant

- extend the growing range of crops that can be grown in the developing world

- enhance the shelf-life of fruits and vegetables grown in the developing world

- develop environmentally sustainable agricultural products

- develop vaccines to immunize against life-threatening illnesses as well as medications that can be administered via genetically engineered agricultural products.

A number of the areas of research addressed in the amendment were discussed by ASPB witnesses, other ASPB members, and ASPB

staff who have worked with the House Science Research Subcommittee on which Johnson is the ranking Democrat. Funding of \$5 million a year for fiscal years 2004 through 2008 would be used from the Initiative for Future Agriculture and Food Systems (IFAFS) for the program under this adopted amendment.

A participating institution can be a land grant college or university, historically black college, a Hispanic-serving institution, or a tribal college or university that has agriculture or biosciences in its curriculum.

At time of publication, IFAFS had not received funding by a House/Senate conference on fiscal year 2002 appropriations for agriculture. Although this mandatory program would come before Congress in future years, future funding is not assured. ❖

NSF Awards \$43.8 Million in Arabidopsis 2010 Project

The National Science Foundation (NSF) has announced 28 awards under its new 2010 Project. The awards total \$43.8 million over four years and are the first under this initiative, which aims to identify within the next 10 years how each of the Arabidopsis plant's 25,000 genes function.

Selected from 106 competitive proposals, the newly funded activities include participants from 43 institutions in 20 states. NSF said the 2010 Project will have broad implications for biology, because Arabidopsis has emerged as the plant analog of the laboratory mouse. By studying this humble plant in the mustard family, scientists can better understand how all sorts of living organisms behave genetically, with potentially widespread applications for agriculture, medicine, and energy, NSF said.

“NSF is excited to begin this important endeavor of understanding the functions of each gene in Arabidopsis,” said NSF director Rita Colwell. “While the task is daunting, it is also essential to this growing area of biotechnology research and its many applications. Only by understanding the fundamental processes of each gene can we piece together the puzzle of how DNA determines, for example, the rate of growth, resistance to disease, and many other factors in plants.”

Vicki Chandler, of the University of Arizona and president of the American Society of Plant Biologists, said, “The 2010 Project will play a major role in determining the function of plant genes. A better understanding of how plant genes function will have profound benefits for people throughout the world and for our environment. The basic

information resulting from this program focusing on Arabidopsis, combined with functional genomics on crop plants, should result in more drought-tolerant crops, more pest-resistant crops, enhanced food crops that will prevent human diseases related to nutritional deficiencies, more life-saving medicines, and more affordable renewable energy resources. It's a new world we're entering.”

Arabidopsis is a useful model because its entire genome consists of a relatively small set of genes that dictate when the weed will bud, bloom, sleep, or seed, NSF noted in a news release. Compared to other plants, Arabidopsis also has far fewer “junk” DNA sequences that contain no genes. And the functional genes have counterparts in plants with much larger genomes, such as wheat, corn, rice, cotton, and soybean. For example,

in a project led by New York University and including the University of California San Diego and the University of Illinois at Urbana-Champaign, geneticists will apply the latest bioinformatic software tools to populate a publicly accessible web database cataloguing gene functions related to nitrogen metabolism, NSF said. Nitrogen is a key element in the growth of all plants.

An estimated 30 percent of crop yield is lost to pests and diseases. Researchers at the University of North Carolina, Chapel Hill, will study a network of genes involved in blight resistance, NSF said. The scientists point to 10 Arabidopsis genes whose functions are related through a particular disease-resistance pathway.

The University of Texas at Austin will take a systematic approach to automating the production of recombinant inbred strains of Arabidopsis. This initiative will help plant scientists in general map and identify genes in local wild populations of Arabidopsis, which has many variants across the world, NSF commented. By understanding the different evolutionary histories of the variants, the 2010 Project researchers will show how environmental variables such as soil, length of days, pests, moisture, temperature, and other factors influence plants' adaptability.

All projects supported by the NSF 2010 Project are coordinated with other Arabidopsis functional genomic initiatives worldwide. A committee of international sci-

entists will ensure open communication and rapid sharing of research data. ASPB actively supported congressional approval of funding for the NSF 2010 Project and worked closely with Senator Christopher Bond's (R-MO) office and his colleagues on the Senate Appropriations Committee in support of this program.

For a list of FY 2001 awards from the 2010 Project, along with abstracts, visit <http://www.nsf.gov/bio/pubs/awards/2010fy01.htm>. ❧

House Farm Bill and Report Call for Balanced Assessment Regarding Biotechnology Risk

The House Farm Bill (H.R. 2646) and its accompanying Agriculture Committee report revise biotechnology risk assessment research to study both risks and benefits of "biotechnology-derived plants and animals" and to compare the relative risks of other production systems.

The House Farm Bill provision on biotechnology risk assessment research includes a paragraph that says, "[Conduct] environmental assessment research designed to provide analysis, which compares the relative impacts of plants and animals modified through genetic engineering to other types of production systems."

House Agriculture Committee report language expands on this further, pointing to the need to look at risks of biotechnology products compared to traditionally bred plant and animal products and compared to other production systems including organic, high-intensity, and low-input farming.

Following is Section 747 of the Agriculture Committee Report accompanying H.R. 2646:

"Sec. 747. Biotechnology Risk Assessment Research (7 U.S.C. 5921) is amended to en-

sure that risk assessment projects carried out under this program compare the risks associated with products of agricultural biotechnology to those associated with traditionally bred plants and animals.

"The Committee believes that environmental assessment research related to biotechnology plants and animals should include benefits that accrue to the environment as well as any potential impact on the environment.

"The Committee intends that the types of research authorized under this section shall evaluate the relative risks of biotechnology-derived plants and animals. Research projects under this section shall include comparative analysis between biotechnology systems and other production systems such as organic, high intensity and low-input farming. In addition, biotechnology derived plants and animals should be compared relative to other production system's impact on the environment (i.e. alternative pesticide, herbicide, irrigation or management practices).

"The Committee intends that biotechnology risk assessment research shall be science-based and shall be carried out according to

the principles laid out in the current regulatory system for evaluating the human, animal and environmental safety standards for approving biotech plants and foods.

"Any funds, either appropriated or assessed, to carry out this section and any implementation plan developed by the Secretary to achieve the objectives of this section shall be expended after consultation with the National Agricultural Research, Extension, Education, and Economics Advisory Board.

"Currently the Secretary assesses funds on six categories of research that have been defined as biotechnology research. However, all funds for risk assessment purposes continue to focus on a single category dealing with recombinant DNA risk assessment research. The Committee intends that the Secretary shall ensure that all assessments are equally applicable to all areas defined as biotechnology by the Secretary to ensure that all potential benefit and risk of this field of science is being evaluated." ❧

EPA, ARS, PNAS Show Monarch Caterpillars Can Live in Harmony with Bt Corn

The Environmental Protection Agency (EPA) reports that findings of a task force organized by the biotech industry show that monarch butterflies are generally not at risk from Bt corn. (*Bacillus thuringiensis* (Bt) is a soil bacterium used as an effective alternative to chemical insecticides for controlling moth pests. Bt corn is developed through genetic modification of corn using modern plant transformation technologies.) The task force (Non-Target Organism Subcommittee of the Agricultural Biotechnology Stewardship Technical Committee) is made up of representatives from a number of producers of Bt corn.

“Extensive empirical laboratory and field studies on potential hazard and actual exposure indicate that Bt corn pollen poses negligible risk to monarch butterflies,” the task force report said. “Independent laboratory research studies demonstrate no statistically significant effects on monarch larval survival or development from consumption of high concentrations of Bt pollen from events MON 810 and Bt11, which vastly dominate Bt corn acreage in North America.

“Furthermore, field experiments confirm that monarch larvae develop normally on milkweed leaves when Bt pollen from these events is naturally deposited during pollen shed, even at high pollen densities. This confirms that, even under maximal exposure conditions, MON 810 and Bt11 pollen poses no measurable hazard. Nevertheless, exposure potential for much of the Corn Belt is further limited by the minor extent of temporal overlap of corn pollen shed (during a relatively brief period each summer) with the presence of sensitive monarch larvae. The absence of hazard to monarchs under conditions of actual exposure, and at much higher levels of exposure in laboratory settings, provides reasonable assurance that monarchs and threat-

ened or endangered species of butterflies are not at risk from planting Bt corn.”

For more information on this report visit the EPA web site at <http://www.epa.gov/pesticides/oldnew.htm> and view the item “Bt corn Effects on Non-target Lepidoptera” listed under the August 21 section.

EPA recently renewed for seven years registrations for Bt corn after affirming that the crop isn't a threat to human health or the environment. For more on this renewal, see the story in the *Washington Post* at <http://www.washingtonpost.com/wp-dyn/articles/A4534-2001Oct16.html>.

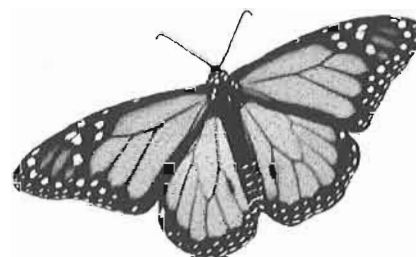
In addition to the report to the EPA and EPA's renewal of registrations for Bt corn, the USDA Agricultural Research Service (ARS) reports that research coordinated by ARS and recently published in the *Proceedings of the National Academy of Sciences* (PNAS) has found that monarch caterpillars are not very sensitive to pollen from most types of Bt corn and that caterpillar exposure to Bt pollen is low. ARS said it took pollen levels greater than 1,000 grains of pollen per square centimeter (cm²) before there were any toxic effects in monarch caterpillars, and even greater levels before the effect was significant.

ARS said caterpillars were found on milkweed in cornfields during the one to two weeks pollen is shed by corn, but corn pollen levels on these plants were found to average only about 170 pollen grains per cm². Less than 1 percent of the milkweed leaves in cornfields had pollen levels exceeding 1,000 grains per cm² during pollen shed.

One variety of Bt corn—Bt 176—did have a toxic effect with pollen doses as small as 10 pollen grains per cm². Bt 176 is one of the earliest forms of Bt corn and has never been planted on more than 2 percent of the corn acres. It will be completely phased out by 2003.

ARS announced October 9 that it has created a web page on Bt corn's impact on monarch butterflies (www.ars.usda.gov/is/br/btcorn). The core of the web page is research coordinated by ARS and recently published in PNAS.

That Bt corn might present a risk became a matter of scientific and public concern when a small study in 1999 (which was not a field study) indicated caterpillars suffered when given no choice but to feed on milkweed leaves heavily dusted with Bt corn pollen, ARS noted.



Senators Bond, Lugar, Rep. Smith Honored for Contributions to Research

The agricultural community, including farm groups, ASPB, and other science societies, recognized three prominent members of Congress September 20 with awards for their contributions to agricultural research. The awards were presented at the annual agricultural genomics and agricultural research reception in the Senate Russell Building.

Senator Kit Bond (R-MO) received the Agricultural Genomics Founders Award for authoring the NSF-sponsored Plant Genome Research Program and continuing to lead support in Congress for plant genome research.

The Arabidopsis plant genome sequencing effort was completed years ahead of schedule as a result of Bond's leadership. The NSF 2010 Project to determine functions of Arabidopsis genes was launched with his support. Genomics research has been expanded to economically important crop plants with increased funds that Bond and his colleagues secured for NSF in Congress. Bond created a new research program sponsored by the U.S. Agency for International Development on plant biotechnology research and development that will help meet the growing needs for food in poor nations.

As a result of bipartisan efforts led by Bond, more than \$300 million in new funds for NSF-sponsored plant genome research have been provided by Congress over the past five years. The award recognized how Bond's efforts have revolutionized agricultural research to better meet the life-sustaining needs of Americans and our world neighbors.

Bond has visited developing nations in Asia with an ASPB member to learn the benefits that advances in plant research can bring to the world's poor. He is a strong advocate of disseminating accurate information on plant biotechnology to the public and has regularly informed his colleagues of science-based reports on the benefits of plant biotechnology.

Bond said that it was "indeed a high honor to receive the handsome Agricultural Genomics Founders Award for leadership in creating the Plant Genome Research Program. . . . As we look back over the last several years, it is encouraging to see the progress that we have made. As we begin to win the attention and understanding of the public, we can expect to see much more progress."


ASPB Public Affairs staff welcomed the opportunity it received to write the inscription for the award presented to Senator Bond in recognition of his visionary leadership in launching the genomic era for agricultural research.

Senator Richard Lugar (R-IN) received an award for his contributions to agricultural research, particularly with regard to his authorship of the USDA Initiative for Future Agriculture and Food Systems (IFAFS). Lugar discovered a way to make use of surplus mandatory funds to create the IFAFS competitive grants program. This program provided a new infusion of \$120 million a year for competitively awarded agricultural research grants, including plant research.

Former chair and now ranking member of the Senate Committee on Agriculture, Nutri-

tion and Forestry, Lugar conducted major congressional hearings that received testimony from scientists on genetically modified crops. Eight ASPB members testified at Lugar's initial hearing in this area.

Congressman Nick Smith (R-MI) received an award for his support of agricultural genomics and agricultural research. Smith has held a series of hearings and produced a well-researched Science Committee report on plant genomics and agricultural biotechnology. Many ASPB members have testified before Smith's Science Subcommittee on Research hearings on plant genomics and biotechnology and contributed to his committee report. Smith is often called upon by other members of Congress in House floor debates, in which he provides informed responses rebutting assertions of plant biotech opponents.

A strong supporter of research on nitrogen fixation, Smith sees opportunities for advancements leading to the more efficient use of nitrogen in genetically modified crops, as well as modified crops that will fix nitrogen. Smith is advancing new legislation supporting research in plant genomics and plant gene expression. 



Senator Bond (left) and Representative Smith accept awards for their leading support of research.

Prakash Explains at AMA Media Briefing How Biotechnology Could Fight Hunger

ASPB member C. S. Prakash of Tuskegee University participated in a food biotechnology media briefing held by the American Medical Association October 4 in New York City.

Prakash noted that biotechnology alone will not eliminate world hunger or poverty. However, he said that biotechnology is a valuable tool that “along with other options, can be a powerful element of change and that can help catalyze developing nations to advance.”

“The challenge of the future is helping policymakers move forward. Information, hope, and optimism will provide a base for responsible change. The first step will be the biggest challenge. The elements that are needed to put policies in place in food biotechnology are money, technical expertise, biosafety and intellectual property laws, and mechanisms to facilitate technology transfer and generation,” Prakash said.

Prakash listed a number of examples of research on the applications of plant biotechnology that will bring revolutionary advances in addressing public health, food, and nutrition needs.

Biotech corn, already widely used in the United States, produces its own protection against the destructive corn borer, Prakash noted. He said research is under way that will lead to sweet potatoes that protect themselves against viruses and to rice, beans, cassava, and other staple foods that will have

enhanced resistance to diseases, pests, and physical stresses.

“We are also helping to eliminate nutritional deficiencies through biotechnology. Biotechnology can expedite the development of new varieties and enhance marginal crops like millet, plantain, grains, legumes, cassava, and sweet potatoes that are important staples in the developing world,” Prakash commented. “In 1997, the World Bank Consultative Group on International Agricultural Research estimated that biotechnology could help improve world food production by up to 25 percent.”

Prakash mentioned the example of “golden rice,” which is genetically engineered to have enhanced levels of β -carotene to address human vitamin A deficiencies—a condition that puts more than 200 million children in the world at risk. He said that about a half-million children tragically go blind each year as a result of vitamin A deficiency. People living in impoverished developing nations are especially at risk for vitamin A deficiency because they have less access to fruits and vegetables and rely primarily on a diet of rice. Prakash said that golden rice will address the vitamin A–deficiency problem without changing crop patterns or individual eating habits.

Others participating in the AMA media briefing on food biotechnology include—


- Steve Taylor of the University of Nebraska, who spoke on assessing the allergenic potential of genetically modified foods and using food biotechnology to remove allergens from foods

- Alexander Karasev of Thomas Jefferson University, who spoke on advances in the use of biomedical plants to administer vaccines

- Martina McGloughlin of the University of California at Davis, who spoke on designer foods—enhancing nutrition with biotechnology

- Alice Churchill of the Boyce Thompson Institute for Plant Research, who spoke on fungi used as a resource for therapeutic agents

- Leonard Gianessi of the National Center for Food and Agricultural Policy, who spoke on environmental benefits of food biotechnology.

The media briefing by the AMA provided an independent forum for university-based scientists to speak on important issues related to food biotechnology. In preparation for the media briefing, AMA staff spoke several months in advance with ASPB member Peggy Lemaux, chair of the Committee on Public Affairs, ASPB member Chris Somerville, and ASPB Public Affairs staff. The AMA report on the media briefing can be found at <http://www.ama-assn.org/ama/pub/print/article/4197-5322.html>. 

Deadlines for *ASPB News*

We invite you to submit articles and letters to the ASPB News. Deadlines for submission of copy follow:

Issue	Deadline
March/April 2002	February 10, 2002
May/June 2002	April 10, 2002
July/August 2002	June 10, 2002
September/October 2002	August 10, 2002
November/December 2002	October 10, 2002
January/February 2003	December 10, 2002

ASPB Members Siedow, Jones Discuss Issues and Answers on GM Foods in Durham

ASPB members James Siedow of Duke University and Alan Jones of the University of North Carolina, Chapel Hill, participated in the forum, "Genetically Modified Foods: Issues and Answers" at the North Carolina School of Science and Mathematics in Durham on October 10.

Siedow provided a historical perspective on genetic modification as it relates to agriculture and addressed safety issues. Jones explained how crop bioengineering holds the potential to help feed a growing world population. Entomologist Fred Gould of North Carolina State University discussed issues related to risks and the adoption of genetically modified crops.

Three opponents of genetic modification of crops were also on the program. Andrew Kimbrell, executive director of the Center for Food Safety, provided his thoughts in a talk entitled "Biotechnology Creates Hunger." David Auerbach of the Department of Philosophy, North Carolina State University, discussed "GMOs: Who Decides? Who Benefits?" Don Hornstein of the University of North Carolina at Chapel Hill School of Law spoke on "From Communities to Countries: Can They Say Yes to 'No-GMO'?"

Siedow said that he and Jones were incredulous about some of the inaccurate, anti-GMO statements that were presented at the forum.

Following the program, Siedow questioned whether the issue for some opponents of GMOs is not their safety but rather other matters such as opposition to big business and the globalization of industries. He said some of the inaccurate statements made about GMOs at the forum seemed more designed to produce unwarranted fears among those in the young audience.

The forum was sponsored by the North Carolina Association for Biomedical Research, North Carolina School of Science and Mathematics, and North Carolina Biotechnology Center.

The International Association for Plant Tissue Culture & Biotechnology	10th IAPT C&B Congress Plant Biotechnology 2002 and Beyond	<i>A Celebration and a Showcase</i>							
	<p>Disney's Coronado Springs Resort, Orlando, Florida June 23-28, 2002</p> <p>This major international event, in partnership with academia and industry, will showcase and celebrate the science, technology, and products of plant biotechnology. It is organized by the U.S. and Canadian Chapters of the IAPT C&B, the Plant Section of the Society for In Vitro Biology & the University of Florida.</p> <p>About the Congress program - An outstanding scientific program is being developed and will feature plenary lectures, symposia, workshops, and posters on the latest developments and issues in modern plant biotechnology. The plenary and symposia lectures will be published in the congress proceedings by Kluwer Academic Publishers.</p> <p>Fellowships for Graduate Students and Post-doctoral Associates - The IAPT C&B will provide a limited number of fellowships for young scientists, students, post-docs, and participants from developing countries. Fellowships will be awarded based on the quality of submitted abstracts.</p> <p>Exhibiting at the Congress - The Congress will host a Science and Technology Exhibit for Industry and academic institutions to showcase their technologies, programs, products, and vision for the future - an opportunity for organizations to meet face-to-face with thousands of plant biotechnology researchers and professionals from around the world. This is the largest gathering of its type and meets only once every four years. It is an opportunity not to be missed!</p> <p>Important deadlines:</p> <table border="0"> <tr> <td>Fellowship opportunities - 1 November 2001</td> <td>Early Bird Registration - 15 January 2002</td> </tr> <tr> <td>Abstract Submission Deadline - January 15, 2002</td> <td>Advance Registration - 24 May 2002</td> </tr> <tr> <td>Hotel Registration - 24 May 2002</td> <td></td> </tr> </table> <p>For registration, abstract, housing and fellowship information go to www.sivb.org For further information about the congress go to www.hos.ufl.edu/iapicb To receive future mailings for the 10th IAPT C&B Congress, please contact the IAPT C&B Congress: c/o Society for In Vitro Biology, 9315 Largo Drive West, Suite 255, Largo, MD 20774 USA Tel: (301) 324-5054 or 1-800-741-7476 (USA/Canada) Fax: (301) 324-5057 E-mail: sivb@sivb.org</p>				Fellowship opportunities - 1 November 2001	Early Bird Registration - 15 January 2002	Abstract Submission Deadline - January 15, 2002	Advance Registration - 24 May 2002	Hotel Registration - 24 May 2002
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Hotel Registration - 24 May 2002									



Publishing, Funding, and Local Education Partnerships

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

In this issue I focus on alternative funding and publication opportunities for education and highlight a pair of successful regional K–12 outreach programs. If there are topics of interest that you would like to see presented in the Education Forum, or if you would like to contribute an article of interest to the educational community, please feel free to drop me a line at gkuleck@lmumail.lmu.edu. And don't forget that the ASPB Education web page is a great education resource unto itself (<http://www.aspb.org/education/>).

Online Education Journal

Biology Education Online (BeoN) is an online, peer-reviewed journal of science teaching resources jointly sponsored by Access Excellence and the National Association of Biology Teachers (<http://www.nabt.org>). This project, funded by the National Science Foundation, gives teachers at all levels an opportunity to share resource materials, disseminate curricular and professional development approaches, and potentially publish their findings. The journal has a unique review process whereby anonymous reviewers respond to posted submissions with the opportunity for authors to revise their original submission based on this feedback. The next level of review is more rigorous, with accepted materials posted by BeoN and submitted to the National Science Digital Library. All material submitted will be linked to meta data, which will make the resource readily accessible via search engines, including an onsite BEoN search feature.

The content and style of materials accepted for publication will include “teaching objects,” written materials, graphics, animation, and complete teaching units. Submissions are welcome for all academic levels (K–16). If you have colleagues at any level (ASPB members, associated teachers, etc.), a visit to the web site may prove worthwhile: <http://www.accessexcellence.org/LC/BEoN/>.

Funding Opportunities at the Department of Education

One funding opportunity for education that might be overlooked rests with the Department of Education. Many of the types of projects supported by this agency overlap support needs of our members. This month, the focus is on enhancing educational technology. A gateway to examining their grant programs and other useful information can be found at <http://www.ed.gov/offices/OCFO/grants.html/>.

Local Educational Partnerships and K-12 Outreach

The Genetics Education Partnership (GEP) is a learning community of K–12 teachers, scientists, and genetics professionals from throughout Washington State who are committed to genetics teaching. Funded through a state grant program, this group provides a clearinghouse for teaching materials in genetics and biotechnology and serves as a professional resource for teachers throughout the state. Partnership retreats provide a forum for discussion of genetic teaching and successful

teaching activities. You can take a look at this successful program by visiting <http://genetics-education-partnership.mbt.washington.edu/summary/psum.html/>.

The Bay Area Biotechnology Education Consortium (BABEC) is a regional network of six education partnerships based in the San Francisco Bay Area and reaching 30,000 primarily high school students. BABEC's goal is to increase student understanding of molecular biology and to raise student awareness of applications of biotechnology. BABEC also wishes to bring about systemic reform by helping teachers bring relevant, thought-provoking, hands-on activities into the classroom. Through BABEC, the partnerships work with teachers, educators, scientists, industry, and academia to develop, disseminate, implement, and sustain contemporary laboratory-based biotechnology curricula. A critical component is professional development for teachers and shared equipment and materials for classroom use. For more information on this collaborative effort, visit <http://www.babec.org/>.

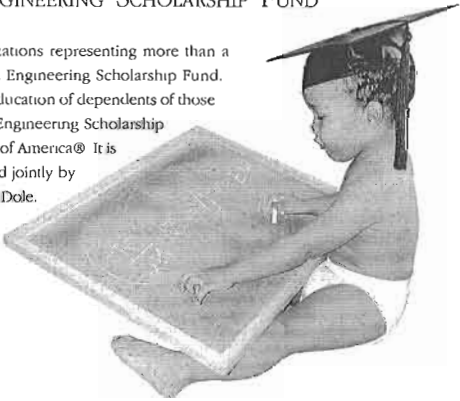
SEPTEMBER 11TH

The Science and Engineering Community Can Make a Difference.

DONATE TODAY TO THE SCIENCE AND ENGINEERING SCHOLARSHIP FUND

In response to the tragedy of September 11, dozens of organizations representing more than a million scientists and engineers have established a Science and Engineering Scholarship Fund. Donations to the Fund will support the science and engineering education of dependents of those who were killed or injured on September 11. The Science and Engineering Scholarship Fund will be administered by the Citizens' Scholarship Foundation of America®. It is part of an overall Families of Freedom Scholarship Fund™ chaired jointly by former President Bill Clinton and former Senate Majority Leader Bob Dole.

TO MAKE A TAX-DEDUCTIBLE DONATION VISIT US ON THE WEB AT WWW.APS.ORG/SCIENCEFUND.HTML OR CALL 1-800-335-1102 AND DESIGNATE FFSF - SCIENCE AND ENGINEERING SCHOLARSHIP FUND.



The sponsoring organizations are not affiliated with Citizens' Scholarship Foundation® of America or the Families of Freedom Scholarship Fund™. Families of Freedom Scholarship Fund™, Citizens' Scholarship Foundation of America (CSFA)® and any associated logos or designs are trademarks of CSFA.

Peter L. Steponkus

Peter Steponkus always sought excellence in his scientific work and the papers that described it. “The scientific papers will be here long after I’m gone,” he would say to explain the need for another series of experiments, another scrutiny of the analysis, or another draft of the manuscript. We knew Pete had an incurable disease, and we imagined that he knew that he would die before his time. But in the unfairly short time that he had, Pete left a lot of excellent work for which we shall remember him.

Pete was born September 18, 1941, and died July 14, 2001. His career took him from an M.Sc. in horticulture at the University of Arizona, to a Ph.D. in plant physiology, biochemistry, and horticulture from Purdue University, to faculty positions at the University of Arizona and Cornell University. It culminated in the Liberty Hyde Bailey Professorship of Crop Physiology at Cornell when he was 45.

His work covered several areas of environmental stress physiology and cryobiology. He worked chiefly with cereal plants but made important contributions to the cryobiology of other plants and to the cryopreservation of a range of animal tissues. His fundamental work in cellular cryobiology elucidated several different forms of freezing damage that contributed to the understanding of cryoinjury across many phyla. His work for the infrastructure of science was enthusiastic and far-sighted: Apart from the work expected of an eminent scientist (invited lectures, memberships, and presidencies of learned societies, editorial boards, committees, conference organizations, and the like), he worked hard to encourage young scientists. This work has been commemorated by the Society of Cryobiology, which has named its award for best student presentation after him.

Peter was almost as severe on his colleagues as he was on himself. Hard work and excellence were expected; lack of rigor or care was quickly exposed. Many of his co-workers and students returned disappointed to the bench



Peter Steponkus

after a discussion with Pete. And many conference speakers were hit with the quick, insightful question that exposed a weakness. He was a source of many great new ideas, both his own and those he prompted by asking good questions of his colleagues. But he was also the doubter, the challenger of every hypothesis, the checker of theories against all of the vast collection of facts that he could command—he filled that role that we all know good science demands but that is often missing. Work in Pete’s laboratory was hard and challenging, but it was also very rewarding and helped launch many good scientific careers. His inspiration extended beyond his immediate co-workers. Many scientists were inspired by his presentations; indeed, he was a gifted lecturer who presented the complexities of cryobiology with clarity and ease.

The hard-thinking, hard-working, rigorous scientist was also a loving father, fondly remembered by Peter Jr., Dana, Karen, and Kristen. Those of us who had the good luck to know him well will miss his friendship. Cryobiology and plant physiology will miss his important contributions and his wisdom. ♣

Joe Wolfe
The University of New South Wales
Sydney, Australia
J.Wolfe@unsw.edu.au

David Siminovitch

One of the Society’s distinguished Canadian members, Dr. David Siminovitch, died in Ottawa, Canada, on November 5, 2001. He devoted his life to the study of frost hardiness in plants, spending 35 years at Agriculture Canada in Ottawa. He earned two Ph.D.s, one from McGill University in Montreal and the other from the University of Minnesota. In 1972, he was awarded the Gold Medal of the Canadian Society of Plant Physiologists for his pioneering work. He leaves two sons, David and Michael, and one daughter, Jane. His wife Helen died about 15 years ago. A more detailed obituary will run in the January/February issue. ♣

Connie Nozzolillo
Emeritus member, ASPB
Archivist, CSPP

LET US HEAR FROM YOU!

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

ASPB Prepares to Launch Web-Based Manuscript Tracking System

ASPB is set for a January 2 launch of Bench>Press, HighWire Press's new Web-based manuscript submission, tracking, review, and publishing system. Staff selected Bench>Press because it is particularly user friendly and because of HighWire's excellent track record for building easy-to-use systems. Bench>Press will be designed and customized to meet the ASPB journal office workflow needs and will help streamline our daily operations.

Web-based manuscript management systems offer faster turnaround times and

speedier review, thereby reducing the time lag from submission to publication; better author and referee service; more accurate matching and tracking of papers and reviewers; easier report generation; less paper handling; and the convenience of e-mail. One unique and particularly valuable feature of Bench>Press is a reviewer tool: Manuscripts sent out for peer review will contain links that enable referees to gain instant electronic access to related references while evaluating papers. ☛

ASPB Travel Award Program for Plant Biology 2002 in Denver: Call for Applications

Applications for travel awards to Plant Biology 2002 are now being accepted for consideration by ASPB. The application form appears on the facing page of this issue of the *ASPB News* and will be posted on the ASPB homepage at <http://aspb.org>.

The Society has allotted \$35,000 for the continuation of the travel award program. The goals of the program are to increase attendance of young scientists at the annual meeting by providing travel funds for those in financial need and to increase diversity among the annual meeting attendees. Undergraduate students are heartily encouraged to apply, as are graduate students, postdocs, and faculty beginning their careers in plant science.

Applicants will need to estimate their expenses as a proposed budget on the form to be considered for an award this year. The housing costs should be calculated for the least expensive option for student housing or shared accommodations. Transportation costs should also be estimated on the basis of the least expensive mode of transportation to Denver. The registration fees will vary, de-

pending on the applicant's academic status. Applicants will be asked to sign a statement confirming that they have researched the costs and that they are requesting the least expensive options.

It is required that applicants submit an abstract of research to be presented at the meeting; they will also be asked to write a paragraph on the form expressing why attending Plant Biology 2002 would enhance their career. Two letters of recommendation are required as well.

Selection criteria will be based first on the science and the quality of the abstract, second on the statement about how attending will have an impact on the applicant's career, third on the strength of the recommendations, and fourth on ethnic diversity. Applications must be received at ASPB headquarters by March 15, 2002. Those applicants selected to receive an award will be notified by April 26, and the money will be sent in advance of the meeting. The early-bird registration cutoff date is May 31, and housing reservations must be made no later than July 1, 2002.

ASPB makes it
even easier to
pay online by
adding

Electronic Check

as a payment
option for new
memberships,
publication
orders, and
contributions.

Electronic checks
must be drawn on
a U.S. bank.

ASPB TRAVEL GRANT APPLICATION FORM, 2002

ASPB is offering a limited number of travel grants for students and faculty beginning their careers to attend Plant Biology 2002 in Denver, Colorado. Undergraduate students and underrepresented minorities (African American, Hispanic, Native American, Alaska Native, and Pacific Islander) are especially encouraged to apply. Application deadline is March 15, 2002. Applicants will be notified of the committee's decision by April 26, 2002.

DIRECTIONS: Complete this form and mail with the following:

- Brief curriculum vitae
- Adviser's letter of recommendation, including level of funds available, if any, for applicant travel, and one other letter of recommendation; faculty do not have to submit letters of recommendation
- Current and pending support (faculty only)
- Paragraph explaining why attending the meeting is important
- Research Abstract
- Any additional pages required to answer questions posted below

Submit completed application and all attachments by March 15, 2002, to **Travel Grants**, American Society of Plant Biologists, 15501 Monona Drive, Rockville, MD 20855-2768, or fax to 301-309-9196.

Name: _____ /Adviser name: _____ /Adviser e-mail: _____

Circle one: Undergraduate Student Graduate Student Postdoc Faculty

Telephone: _____ Fax: _____ E-mail: _____

Institution: _____

Street: _____

City: _____ State: _____ Zip Code: _____

ASPB Member? Yes No

Have you previously received an ASPB Travel Grant? Yes When? No

List plant science organizations in which you hold active membership: _____

On a separate page, please submit your research abstract and a paragraph in which you explain why attending Plant Biology 2002 is important to your career development.

Please circle the group to which you belong (for administrative purposes only):

African American • Hispanic • Native American • Alaska Native • Pacific Islander
Asian American • Caucasian

ASPB Undergraduate Research Fellowships

The goal of this program is to provide opportunities for students to pursue meaningful research in plant biology at their home institutions early in their college years. Ideally, students should be sophomores at the time of application and would conduct the research the following summer. Exceptionally well-prepared first-year students and juniors who provide evidence of a strong commitment to plant biology will also be considered. In addition to conducting the research, recipients will be expected to present their results at the ASPB annual meeting the following summer. Funding to attend the meeting will be provided by the ASPB Travel Award Program. With this opportunity, ASPB hopes to encourage students to pursue advanced degrees and careers in plant biology.

Funding

Each fellowship provides the following:

- \$3,000 student stipend
- \$500 for supplies
- one-year student membership in ASPB
- application for a travel allowance to attend the ASPB national meeting

Eligibility

Applicants must

- be enrolled as full-time, degree-seeking students
- be involved in a research project in the laboratory of a faculty mentor who is a member of ASPB
- not receive other direct financial support for their research (institutional stipend, Sigma Xi Grants-in-Aid of Research, Council on Undergraduate Research Fellowship, etc.)

Mentors must

- be a member of ASPB
- have an ongoing research program

Selection Criteria

Competitive student applicants should demonstrate

- academic achievement
- strong motivation for research, with career objectives relevant to the aims of the fellowship program
- good preparation for conducting the research

The faculty member sponsoring the project should demonstrate

- a commitment to undergraduate education and research
- a research program that is of high scientific merit (the project should clearly support the goals of the research program)
- that the project is appropriate for undergraduate research
- that there are facilities to support the proposed work
- support from the administration (department chair or dean) for the project

Preference is given to proposals that demonstrate the mentor's and the institution's financial commitment to the work and to proposals that show a significant impact on the mentor's ongoing research program.

Proposal Evaluation

ASPB is interested in supporting undergraduates at all types of institutions. To facilitate this goal, the proposals are grouped according to the applicant's institution type within the Carnegie classification scheme as follows:

Group A	Group B
Research Universities I Research Universities II Doctoral Universities I Doctoral Universities II	Master's Universities and Colleges I Master's Universities and Colleges II Baccalaureate Colleges I Baccalaureate Colleges II Associate of Arts Colleges

The number of proposals awarded funding in each group will be weighted according to the number of proposals received.

Deadline

January 15, 2002 (NEW DEADLINE)

Visit <http://www.aspb.org/education/summerundergrad.cfm> to access the application form.

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 e-mail to sbraxton@aspb.org or mail to Sylvia Braxton Lee, ASPB News, 15501 Monona Drive, Rockville, MD 20855-2768 USA. Faxed transmissions are not accepted.

Future ASPB Annual Meeting Sites

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

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

2004: Orlando, Florida
Saturday, July 24, through
Wednesday, July 28

March 23–26
6th International Conference on Plasma Membrane Redox Systems and Their Role in Biological Stress and Disease
Ravenna, Italy
For information contact Paolo Trost, Department of Biology, University of Bologna, telephone +39-051-2091329, fax +39-051-242576, e-mail trost@alma.unibo.it, or visit the web site at <http://www.unibo.it/redox2002>.

APRIL

April 8–12
Society for Experimental Biology
Annual Main Meeting
Swansea, Wales, United Kingdom
Contact the SEB office at: telephone, +44-207-439-8732, fax +44-207-7287-4786, e-mail c.trimmer@sebiology.org/. See web site at www.sebiology.org.

April 11–14
5th Workshop on Sulfur Assimilation in Higher Plants: "Sulfur Transport and Assimilation—Regulation, Interaction, Signaling"
Montpellier, France
For more information on program and how to register, visit the web site at http://cost829.dhs.org/planned_meetings/. Workshop limited to 120 participants. Contact Prof. Jean-Claude Davidian, ENSA-M / INRA (UMR 5004) 2, Place Viala, 34060 Montpellier, France, davidian@ensam.inra.fr.

April 15–17
17th Long Ashton International Symposium "New Frontiers in Plant Development: From Genes to Phenotype"
Bristol, United Kingdom
For information contact Christine Cooke at +44-1275-549341, fax +44-1275-549397, e-mail Christine.Cooke@BBSRC.AC.UK.

2002

JANUARY

January 3–6
11th Western Regional Photosynthesis Meeting
Asilomar Conference Grounds, Pacific Grove
California
Organizers: Maria L. Ghirardi (maria_ghirardi@nrel.gov), John Nishio (nishio@uwyo.edu) and Dianne Ahmann (dahmann@mines.edu). Registration abstract deadline: October 31, 2001. Abstracts deadline: November 30, 2001. Visit web site at <http://uwadmweb.uwyo.edu/botany/westphs2002>.

January 4
SEB Plant Development Group Meeting
Till Death Us Do Part—Terminal Events in Plant Development
Royal Holloway University of London
Egham, Surrey
Contact: Dr Tony Stead, a.stead@rhul.ac.uk. See web site at <http://www.sebiology.org/meetings/2002/plantdev/index.htm>.

January 22–27
Keystone Symposium on Specificity and Crosstalk in Plant Signal Transduction
Granlibakken Resort, Tahoe City, California
Organizers: Julian I. Schroeder, Mark A. Estelle, Masaki Furuya. Abstract Deadline: September 21, 2001. Early Registration Deadline: November 20, 2001. For information contact 800-253-0685, fax 970-262-1230, fax 970-262-1525, info@keystonesymposia.org or JISchroeder@ucsd.edu. Visit Web site at www.keystonesymposia.org.

FEBRUARY

February 12–14
Chemexpo 2002—Indian Chemistry For Global Competitiveness
Mumbai, India
For information visit us at <http://www.chemexpo2002.com/> or e-mail info@chemexpo2002.com.

MARCH

March 2–4
Southern Section's Annual Meeting
Georgia Center for Continuing Education
University of Georgia Campus, Athens
Ruth Grene (formerly Alscher) is the organizer, working with Scott Merkle, local host. For information contact Ruth Grene, Department of Plant Pathology, Physiology and Weed Science, Virginia Tech, Blacksburg, VA 24061-0330; telephone 540-231-6761, fax 540-231-5755, e-mail ralscher@vt.edu.

March 15–16
Annual Meeting of the Midwest Section of the American Society of Plant Biologists
Marcum Conference Center, Miami University
Oxford, Ohio
For information contact John Z. Kiss, Section Chair, Miami University, Department of Botany, Oxford, OH 45056; kissjz@muohio.edu. See also the Midwest Section home page at http://www.aspb.org/committees_societies/midwestern/index.cfm.

April 23–27

VI International Meeting on Biology and Biotechnology of the Plant Hormone Ethylene Murcia, Spain

For information contact Dr. M. Vendrell, e-mail mvmagr@cid.csic.es, or Dr. F. Romojaro, e-mail ethylene@cebas.csic.es. Meeting Secretariat: CEBAS-CSIC, Campus Universitario de Espinardo, Apartado de Correos 4.195, 30100 Murcia, Spain; telephone +34-968-396328, fax +34-968-396213.

MAY

May 16–18

Plant Reproduction 2002: From Evolutionary and Physiological Analyses to Molecular and Cellular Studies

Pennsylvania State University, University Park Contact Dr. Teh-hui Kao, 403 Althouse Lab, The Pennsylvania State University, University Park, PA 16802; telephone 814-863-1042, fax 814-863-9416, e-mail txk3@psu.edu, web sites <http://conferences.cas.psu.edu/> and <http://www.lsc.psu.edu/phys/annualsym.html>.

May 20–22

Urban Agriculture: Emerging Opportunities in Science, Education, and Policy Dallas, Texas

Call +972-231-5362 for more information or visit <http://urbanag.tamu.edu>.

JUNE

June 3–8

18th North American Conference on Symbiotic Nitrogen Fixation

University of Missouri, Columbia

For information contact Lorie Thunhorst, 344 Hearn, University Extension Conference Office, University of Missouri, Columbia, Missouri, 65211; telephone 573-882-2429, fax 573-882-1953, e-mail thunhorstls@missouri.edu.

June 23–28

11th International Symposium on Iron Nutrition and Interactions in Plants Udine, Italy

Contact: Roberto Pinton, Department Produzione Vegetale e Tecnologie Agrarie, University of Udine, Via Delle Scienze 208 I-33100 Udine, Italy; telephone +390432558641, fax +390432558603, e-mail iron.symp@dpvta.uniud.it, Web site <http://www.ironymp2002.unimi.it>.

JULY

July 7–12

XXIst International Carbohydrate Symposium Cairns, Queensland, Australia

For information, contact The Secretariat, Congress West, 12 Thelma Street, PO Box 1248, West Perth, Western Australia 6872; fax +61-8-9322-1734, e-mail conwes@congresswest.com.au, web site <http://www.ics2002.uwa.edu.au/>.

July 28–August 1

Plant Growth Regulation Society of America

Westin Nova Scotian, Halifax, Nova Scotia Contact Dr. Wayne A. Mackay, Program Chair, Texas A&M University, 17360 Coit Road, Dallas, TX 75252-6599; telephone 972-231-5362, fax 972-962-9216, e-mail w-mackay@tamu.edu, Web site <http://www.griffin.peachnet.edu/pgrsa>.

AUGUST

August 3–7

The Annual Meeting of the American Society of Plant Biologists

Adams Mark Hotel Denver, Colorado

For information see <http://www.aspb.org/meetings/pb-2002/index.cfm>.

August 11–17

XXVI International Horticulture Congress and Exhibition

“Horticulture: Art and Science for Life”

Toronto, Canada

The Toronto Knowledge & Scholarship Forum is planned August 13, 2002. Offers of oral or poster presentation specifically intended for this forum must be received by e-mail (crom@uark.edu) by November 30, 2001. To see the third announcement and call for abstracts, visit <http://www.ihc2002.org/>.

SEPTEMBER

September 1–6

13th International Congress of the Federation of European Societies of Plant Physiology (FESPP) Heraklion, Crete, Greece

For information please contact Professor Kalliopi A. Roubelakis-Angelakis; telephone +30-81-394073; 304459, fax +30-81-394459, e-mail poproube@biology.uoc.gr; fespp@biology.uoc.gr; Website www.biology.uoc.gr/meetings/fespp.

September 15–19

6th International Conference on Pseudomonas Syringae Pathovars and Related Pathogens Maratea (PZ), Italy

For information contact Nicola Sante Iacobellis, Dipartimento di Biologia, Difesa e Biotecnologie Agro-Forestali, Università degli Studi della Basilicata, Campus Macchia Romana, 85100 Potenza, Italy; telephone +39 0971 205498, fax +39 0971 205503, e-mail pseudomonassyringae@unibas.it, web site www.unibas.it/utenti/pseudomonassyringae.

ASPB Placement Service

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**

LASTNAME	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): _____



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

ASPB operates a placement service in which are kept active two files of resumes of individuals who are seeking employment. Employers are urged to survey the resume files for those seeking permanent positions and those seeking postdoctoral or similar positions. The files cost \$25 each and may be ordered from Donna Gordon, ASPB 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 ASPB News and on the ASPB Homepage

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

- **Academic/Government/Industry Permanent Positions (Ph.D. level):**
Fee: \$150. Includes listing in one issue of the *ASPB News* and 12 weeks on the ASPB online Job Bank.
Word Limit: 200 for print ad; no limit for online ad.
- **Postdoctoral Positions**
Fee: No charge for universities, non-profit organizations, and government installations; \$150 for commercial companies. Includes listing in one issue of the *ASPB News* and 12 weeks on the ASPB online Job Bank.
Word Limit: 200 for print ad; no limit for online ad.
- **Research/Technical Positions (non-Ph.D.)**
Fee: No charge for universities, non-profit organizations, and government installations; \$150 for commercial companies. Includes listing in one issue of the *ASPB News* and 12 weeks on the ASPB online Job Bank.
Word Limit: 200 for print ad; no limit for online ad.
- **Assistantships, Fellowships, Internships**
Fee: No charge; ad will appear in two issues of the *ASPB News*—the first time at full length and the second time in an abbreviated form—and 12 weeks on the ASPB online Job Bank.
Word Limit: None.

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

Faculty Position

Waksman Institute, Rutgers University
(Received 09/07)

Applications are invited for a tenure-track position in plant developmental biology or other cutting-edge areas of plant sciences. The appointment can be made at any level from assistant to full professor. The applicant is expected to maintain a successful, externally funded research program and to have an interest in teaching at the undergraduate and graduate levels. Applicants should send a curriculum vitae, list of publications, and a summary of research plans, and arrange to have three confidential letters of reference sent, to Pal Maliga, Chair, Plant Search Committee, Waksman Institute, Rutgers University, 190 Frelinghuysen Road, Piscataway, NJ 08854-8020. The committee will begin its review of applications November 15, 2001. Applications will be accepted until the position is filled. Starting date is September 1, 2002. Rutgers University is an affirmative action/equal opportunity employer.

Director
Texas A&M University, College Station
(Received 09/07)

The Institute for Plant Genomics and Biotechnology at Texas A&M University invites applications for the position of director, Laboratory for Plant Genome Technologies (LPGT). This position will be a research/service appointment at the assistant professor level. As the director of the LPGT, the candidate will be responsible for developing the laboratory into a state-of-the-art core genomics facility and will be expected to establish collaborative research projects with members of the TAMU research and plant breeding communities. Candidates with the ability to develop and transfer new technology in the areas of high-throughput plant genomics and/or DNA marker analysis are particularly encouraged to apply. The Institute for Plant Genomics and Biotechnology offers a competitive salary, commensurate with experience. For more information about the Institute, see <http://ipgb.tamu.edu>. Applicants should send curriculum vitae, reprints of significant publications, statement of research interests and have three letters of reference sent to Chair, LPGT Director Search Committee, Norman E. Borlaug Center for Southern Crop Improvement, Texas A&M University, 2123 TAMUS, College Station, TX 77843-2123. Applications will be reviewed upon receipt and continue until the position is filled. Texas A&M

University is an affirmative action/equal opportunity employer committed to diversity.

Assistant Professor
University of Oklahoma, Norman
(Received 09/07)

Announcing a tenure-track, assistant professor position beginning Summer 2002 in plant development/plant genomics, addressing fundamental aspects of plant development and/or the influence of environmental stress on plant development and growth using modern tools of molecular analysis. Qualified candidates must possess a Ph.D. and relevant postdoctoral experience, and provide evidence of a strong ability to develop independent, extramurally funded research as well as a strong commitment to graduate and undergraduate teaching. Applicants should send a current curriculum vitae, representative reprints, statements of research plans, teaching interests and philosophy, and arrange to have three letters of reference sent to Dr. Gordon Uno, Chair, Department of Botany and Microbiology, 770 Van Vleet Oval, University of Oklahoma, Norman, OK 73019 (inquiries to guno@ou.edu). Current faculty possess strengths in functional genomics and proteomics, ecology, global change, phytoremediation and bioremediation, plant structure, systematics, microbial physiology, and microbial pathogenesis. Resources include

THE DEADLINE FOR ADS FOR THE JANUARY/FEBRUARY ISSUE OF ASPB News IS DECEMBER 31, 2001.

Check ASPB'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 *ASPB News*.

an electron/confocal microscopy facility, a sequencing facility, a microarray facility, and a planned genomics research institute. For more information, see <http://www.ou.edu/cas/botany-micro/>. Position offers excellent benefits. Women and members of underrepresented groups are encouraged to apply.

Assistant Professor/Assistant Plant Biologist
University of California, Davis
(Received 09/13)

The College of Agricultural and Environmental Sciences at UC Davis invites applications for a tenure-track, assistant professor in postharvest biology of fruit and nut species in the Department of Pomology. The appointee will have responsibilities for teaching, advising, and research. Candidates must have a Ph.D. in an appropriate field and postdoctoral research experience. The college seeks a plant biologist to conduct fundamental research on the postharvest biology of California's fruit and nut crops. It is not necessary or expected that the candidate have direct research experience in postharvest biology or with fruit and nut crops. Research opportunities exist in areas such as gene discovery, functional genomics, proteomics, metabolic biology, and signal transduction, where fundamental research discoveries can be expected to lead to new technologies affecting nutritional and flavor quality, safety, and/or pathology of fruits and nuts. Applicants should submit a curriculum vitae, transcripts (if within five years of graduation), a statement of research and teaching experience, and the names and addresses of three to five references to V. Polito, Chair, Search Committee, Department of Pomology, One Shields Avenue, University of California, Davis, CA 95616-8683. The position will remain open until filled, but to ensure consideration applications must be received by November 30, 2001. The University of California is an affirmative action/equal opportunity employer.

Assistant Professor
Louisiana State University, Baton Rouge
(Received 09/20)

The Department of Biological Sciences at Louisiana State University invites applications for a tenure-track assistant professor position in developmental biology, to begin in August 2002. The position is open to all areas of eukaryotic developmental biology. Areas of interest include, but are not limited to, developmental neurobiology, evolution of development, fertilization biology, and plant developmental biology. A Ph.D. or equivalent degree and postdoctoral experience are required. The successful candidate will be expected to maintain a vigorous, extramurally funded research program and contribute to undergraduate and graduate teaching. The Department of Biological Sciences has recently expanded into the new 70,000 sq. ft. Life Sciences Annex and offers competitive start-up

packages. We anticipate hiring at the assistant professor level, but applications from exceptional associate professor candidates will be considered. Applicants should submit a curriculum vitae, statements of research and teaching interest, and copies of relevant papers, and arrange to have three letters of recommendation sent to Developmental Biology Search, c/o Dr. John C. Larkin, Department of Biological Sciences, Louisiana State University, 202 Life Sciences Bldg., Baton Rouge, LA 70803, ref. log # 0313. Review of applications will begin November 1, 2001, and continue until the position is filled. Additional information about the department is available at <http://www.biology.lsu.edu>. Inquiries may be sent by e-mail to jlarkin@unix1.sncc.lsu.edu. LSU is an equal opportunity/equal access employer.

Plant Biology Professor
Barnard College, New York, New York
(Received 10/16)

The Department of Biological Sciences at Barnard College seeks an assistant professor in plant biology (tenure track) for September 2002 to participate in undergraduate teaching and maintain a funded research program in a liberal arts college that has a strong focus on research and is affiliated with Columbia University. Candidates should be broadly trained and will be expected to teach upper-level lecture and laboratory courses in plant physiology and other courses within their specialty and participate in the introductory biology courses. Research specialty may include any relevant area of plant biology (e.g., physiology, development, or other integrative specialty). Facilities are described at <http://www.barnard.edu/biology/plant.html>. A Ph.D. and strong commitment to undergraduate teaching required; postdoctoral research and prior teaching experience desirable. Submit curriculum vitae, list of publications, brief statements of research and teaching interests, up to three representative publications, and three letters of recommendation to Plant Physiology Search Committee, Department of Biological Sciences, Barnard College, 3009 Broadway, New York, NY 10027. Deadline is January 15, 2002. Please contact ljohnson@barnard.edu for further information.

Professor and Chair
Rutgers, the State University of New Jersey,
New Brunswick
(Received 10/24)

Rutgers, the State University of New Jersey, is seeking applicants and nominations for the position of professor and chair of the Department of Plant Biology and Pathology. This is a tenured 12-month appointment with an attractive startup package. Applicants are required to have an excellent and continuing record of achievement in teaching, research, and/or extension, in addition to demonstrated administrative skills. The chair must appreciate, support, and foster all programs within the

mission of the department ranging from projects of applied field research to fundamental studies in physiology, genetics, pathology, horticultural engineering, and agricultural and environmental biotechnology. To request a detailed position description, contact altavilla@aesop.rutgers.edu. Review of applications begins January 31, 2002, and continues until position is filled. Please send letter of application, curriculum vitae and names, addresses, and telephone numbers of five references. Also include a statement discussing your administrative philosophy and vision to foster faculty, student, and staff development. All application materials should be sent to Dr. Joseph Goffreda, Chair, Search Committee, Department of Plant Biology and Pathology, Rutgers, The State University of New Jersey, 59 Dudley Road, New Brunswick, NJ 08901-8520. Rutgers University is an affirmative action/equal opportunity employer.

Assistant or Associate Professor
University of North Texas, Denton, Texas
(Received 10/25)

The Department of Biological Sciences (www.biol.unt.edu) invites applications for a tenure track/tenured position in eukaryotic genetics at the rank of assistant or associate professor beginning in September 2002. The successful candidate will be expected to contribute to a strong research program and participate in instruction at the undergraduate and graduate levels. Preference will be given to candidates with existing external funding. Preference will be given to applicants whose research complements an existing group of funded scientists working in the area of molecular biology and plant biotechnology. Candidates working with model organisms are especially encouraged to apply. The faculty member will be responsible for teaching a course in genetics to undergraduate majors and for a graduate course in the faculty member's research area. Located in the Dallas-Fort Worth metroplex, the University of North Texas is a growing institution with an enrollment of approximately 28,000 students. Excellent research facilities and competitive salary and start-up funds are available. The department offers undergraduate and graduate (M.S./Ph.D.) degrees in biology, biochemistry, molecular biology, and environmental science. Submit curriculum vitae, names of three references, and statement of research goals to Earl G. Zimmerman, Chair Department of Biological Sciences, PO Box 305220, University of North Texas, Denton, TX 76203-5220. Review of applications will begin on December 1, 2001. The University of North Texas is an equal opportunity/affirmative action institution committed to diversity in its employment and educational programs, thereby creating a welcoming environment for everyone.

Faculty Positions

Donald Danforth Plant Science Center
St. Louis, Missouri
(Received 10/26)

The Danforth Center announces positions for principal investigators at the associate and assistant member levels to direct fundamental research programs. Seeking scientists with broad interests/training in at least two scientific disciplines and well-formed research programs that will benefit from interactions with scientists of other disciplines. Demonstration of prior or current support and of interdisciplinary research beneficial. Four faculty appointments will be considered in biochemistry, structural biology, phytochemistry/neurochemicals, fundamental aspects of animal or human nutrition, cell biology, and abiotic stress biology. Send resume, brief description of research interests, reprints of three key publications, and names of three references to Ms. Billie Broeker, Human Resources, Donald Danforth Plant Science Center, 975 North Warson Road, St. Louis, MO 63132. Visit www.danforthcenter.org, for more information. The Donald Danforth Plant Science Center is an equal opportunity/affirmative action employer and encourages applications from underrepresented groups, including minorities, women and people with disabilities.

Assistant Professor

Texas A&M University, College Station
(Received 10/26)

The Department of Horticultural Sciences, Texas A&M University, invites applications for a 12-month tenure-track (50% research, 50% teaching) faculty position focusing on abiotic stress biology. This position will link applied horticultural crop improvement and basic plant genomics/ gene discovery programs. The individual is expected to participate in the undergraduate and graduate teaching programs of the department and/or interdisciplinary faculties (e.g., Molecular and Environmental Plant Sciences). For more information about the department and its facilities see <http://aggiehorticulture.tamu.edu> and for MEPS <http://soilcrop.tamu.edu/meps/>. Individuals experienced in research on water, salinity, or heat stress resistance are particularly encouraged to apply. Applicants should send curriculum vitae, statement of research interests, and academic transcripts and have three letters of reference sent to Dr. Marla Binzel, Department of Horticultural Sciences, Texas A&M University, 2133 TAMU, College Station, TX 77843-2133; e-mail m-binzel@tamu.edu. Review of applications will begin December 15, 2001, and will continue until the position is filled. Texas A&M University is an affirmative action/equal opportunity employer committed to diversity.

Plant Biologists

University of Delaware, Newark
(Received 10/31)

The Department of Plant and Soil Sciences and the Delaware Biotechnology Institute (DBI)

invite applications for two tenure-track faculty positions at the assistant or associate professor levels. The successful candidates will be expected to develop a vigorous extramurally funded research program in an area of contemporary plant biology with a high potential for unique fundamental discoveries, and participate in teaching. Candidates whose research would be maximally enhanced by the interactions within a new multidisciplinary institute are particularly encouraged to apply, as are those interested in exploring systems approaches to biological problems and/or the collaborative application of basic research for crop improvement. The University of Delaware is committed to building a world-class research and education program in plant biology through the combined efforts of the Department of Plant and Soil Sciences, the Delaware Biotechnology Institute (DBI), and other units on campus. DBO-associated faculty hold appointments at the University of Delaware in one or more of the following units: plant and soil sciences, marine studies, animal and food sciences, chemical engineering, computer and information sciences, biological sciences, chemistry and biochemistry, business and economics, electrical and computer engineering, material sciences and engineering, and mechanical engineering. For more information the DBI and its faculty, see www.dbi.udel.edu. Competitive salary/start up packages, new modern lab space, and state-of-the-art facilities for microarray/gene chip analysis, proteomics, bioimaging and computational biology are available. Candidates must have Ph.D., postdoctoral training, and a demonstrated excellence in innovative research at the molecular level. Applicants should forward a curriculum vitae, a statement of research interests and future plans and have three reference letters sent to Pamela J. Green, Chair, Plant Biology Search, c/o Amy Broadhurst, Department of Plant and Soil Sciences, University of Delaware, Newark, DE 19716-1301. The review of applications will begin December 1, and continue until suitable candidates are identified. Curriculum vitae and letters of reference shall be shared with departmental faculty. The University of Delaware is an equal opportunity employer that encourages applications from minority group members and women.

POSTDOCTORAL POSITIONS**Postdoctoral Positions**

University of Stellenbosch, South Africa
(Received 09/05)

Two postdoctoral positions are available immediately to study the regulation of carbohydrate metabolism in sugarcane and grape berries. Position one is to investigate carbon partitioning and metabolic flux in genetically modified sugarcane. The incumbent will do labeling work, extract and analyze metabolites and determine expression on both protein and transcript level of the key enzymes.

Candidates must have a strong background and demonstrated ability in molecular biology and biochemistry techniques. Experience in studying the regulation of plant metabolism is a plus. Position two is to participate in a project that is focused on the isolation and characterization of specific promoters. In addition to having a solid background in biochemistry and molecular biology, working experience in transformation work and gene isolation is desired. Interested applicants should send curriculum vitae and arrange to have three letters of reference sent to Dr. F. C. Botha, Director, Institute for Plant Biotechnology, Private Bag X1, Matieland, 7602, South Africa; telephone +27-31-808-3834, fax +27-31-808-3835, e-mail fc@maties.sun.ac.za.

Postdoctoral Position

Cornell University, Ithaca, New York
(Received 09/14)

A postdoctoral position is available in Dr. Jian Hua's laboratory in a stimulating research environment at Cornell University. Our laboratory is interested in the regulation of plant growth homeostasis in response to temperature variations. Two Arabidopsis genes have been identified as essential for maintaining normal growth in cold environment (Hua J. et al., *Gene & Development* 15, 2263; 2001). Both proteins contain calcium-dependent phospholipid-binding domains, suggesting coordination between membrane function and cell growth when temperature changes. The postdoctoral fellow will have the opportunity to explore this less-studied field in a startup lab. Genetic, biochemical, and genomic approaches could be employed to discover other regulators of growth homeostasis and to identify their molecular mechanisms. If interested, please send a cover letter, a curriculum vitae, and three references to Dr. Jian Hua, Department of Plant Biology, 228 Plant Science Building, Cornell University, Ithaca, NY 14853; e-mail jh299@cornell.edu.

Postdoctoral Position

CNRS-INRA, Montpellier, France
(Received 09/14)

A postdoctoral position is available immediately for non-EEC citizens (Swiss, Turkish, Polish, Norwegian can apply) to study the YSL (Yellow Stripe-Like) family of putative metal transporters in Arabidopsis [Curie et al., *Nature* 409, 346-349; 2001]. This project will include expression and localization analyses, characterization of knock-out mutants and research of substrate by heterologous expression in yeast. For considerations, applicants must have publications in peer-reviewed international journals. The initial appointment is for one-year, renewable for six months. Please send a letter of application and the address of three references to Dr. Catherine Curie (curie@ensam.inra.fr) or Jean-Francois Briat (briat@ensam.inra.fr), Laboratoire de Biochimie et Physiologie Moléculaire des Plantes ENSAM/

INRA/ CNRS, 2 place Viala, F-34 060
Montpellier CEDEX 1, France; telephone +33-
499-61-25-72, fax +33-467-52-57-37.

Postdoctoral Position

University of California San Diego
(Received 09/19)

A DOE-funded postdoctoral position is available to pursue biochemical analysis of TANGLED, a microtubule binding protein required for the spatial control of cytokinesis in maize (see *J. Cell Biol.* 152, 231–236; 2001, and references therein). The project will focus on understanding how TAN interacts with the cytoskeleton and with other proteins, including a kinesin identified as a candidate TAN-interacting protein in a yeast two-hybrid screen. Significant experience with protein biochemistry is required, ideally working with cytoskeletal proteins and/or cytoskeleton-interacting proteins. Opportunity to develop other projects involving molecular genetic analysis of plant cell division and morphogenesis (see <http://www-biology.ucsd.edu/faculty/lsmith.html>), as well as to interact with a strong community of plant biology and cell biology researchers at UCSD, Salk, and Scripps. Applicants should send a curriculum vitae including contact information for at least two references to lsmith@biomail.ucsd.edu. Position is available immediately, but starting date is flexible.

Postdoctoral Position

CNRS-CEA, St Paul-lez-Durance, France
(Received 09/27)

Two postdoctoral positions for two years are available in our lab. Our laboratory studies ATP-Binding Cassette proteins and P-type ATPases involved in response to biotic and abiotic stresses in *Arabidopsis*. We would like to characterize further few transporters of these families involved in the detoxification of heavy metals. In order to follow this project, we search for a motivated scientist that will be implicated in the genetic and functional characterization of these proteins. Approaches include construction of overexpressing and analysis of knockout lines, reporter gene analysis as well as functional characterization of the membrane transporters by heterologous expression. Our lab is well equipped, is part of the department of Plant Ecophysiology and Microbiology where 100 researchers work in various field of plant science and is located in Provence, the South of France one of the nicest places to live in. Applicants should have a Ph.D., a publication in international journal and a strong background in plant molecular biology. Please send curriculum vitae, reprint of recent publications and at least two reference letters directly to Cyrille FORESTIER, CEA Cadarache, UMR 163 CNRS-CEA, DEVM / LEMS, F-13108, St Paul-lez-Durance, France; e-mail cforestier@cea.fr.

Postdoctoral Position

Montana State University-Bozeman
(Received 10/02)

A postdoctoral position is available immediately in the laboratories of Dr. Tom Blake and Dr. Andreas Fischer to study barley nitrogen metabolism and SNP detection using DNA microarray technology. One project will focus on the establishment of a small (250 elements) microarray centered on genes involved in nitrogen acquisition, remobilization and transport. Experiments will focus on the identification and characterization of genes limiting for nitrogen redistribution to developing grains. Additionally, the successful candidate will participate in the development of microarray-based SNP detection technology for barley. Required: Ph.D. in genetics, biochemistry or a related field. Familiarity with molecular techniques, such as PCR, RNA extraction, DNA extraction, Northern and Southern blotting and prior exposure to genetics are preferred. A working knowledge of standard biochemical techniques (protein extraction, enzyme assays, gel electrophoresis) would be an advantage. The initial appointment will be for one year, with salary dependent upon qualifications. Renewal will depend on performance and availability of funding. Applicants should send a cover letter, curriculum vitae and addresses of three references to fischer@montana.edu or blake@hordeum.oscs.montana.edu. ADA/EO/AA/Vet. Pref.

Postdoctoral Research

University of California, Berkeley
(Received 10/03)

A postdoctoral research position is available immediately in the plant molecular biology/biochemistry group of a multi-disciplinary lab focused on the bioremediation of selenium and heavy metals from contaminated environments. The chosen candidate will continue work on identifying and characterizing genes involved in plants' heavy metal and oxidative stress response and the uptake and metabolism of selenium. Applicants should have experience in one or more of the following areas: plant transformation, plant physiology, molecular biology techniques, biochemical assay development, yeast complementation strategies, or microarray analysis. Please send a letter of interest, curriculum vitae, and contact information for three references, to Dr. Norman Terry, Department of Plant and Microbial Biology, 111 Koshland Hall, University of California, Berkeley, Berkeley, CA 94720 or as an e-mail attachment to nterry@nature.berkeley.edu. The University of California is an affirmative action/equal opportunity employer.

Postdoctoral Positions

Donald Danforth Plant Science Center
St. Louis, Missouri
(Received 10/09)

Several positions in plant lipid metabolism are available starting on or near January 15, 2002. Projects with openings involve structure-function studies of fatty acid condensing enzyme, production of unusual fatty acids in oilseeds, analysis of metabolites of fatty acid and lipid metabolism using LC-MS, and characterization of plant lipid metabolism in different plant organs. A Ph.D. with a strong background in biochemistry is a minimum requirement, and experience with plants and molecular genetics is highly desirable. Further descriptions of these openings can be found under "Job Opportunities" at www.danforthcenter.org. This research will be carried out at the Donald Danforth Plant Science Center in St. Louis. The Center has recently moved into a new state-of-the-art facility dedicated to basic and applied plant research. Please send resume and three references to Jan Jaworski Lab, c/o Ms. Billie Broecker, Human Resources, Donald Danforth Plant Science Center, 7425 Forsyth Boulevard, Box 1098, St. Louis, MO 63105. The Donald Danforth Plant Science Center is an equal opportunity/affirmative action employer and encourages applications from underrepresented groups, including minorities, women, and people with disabilities.

Postdoctoral Position

University of Florida, Gainesville
(Received 10/10)

A postdoctoral position in plant molecular biology is available at the Horticultural Sciences Department, University of Florida, Gainesville. The project focuses on the synthetic pathways of beta-alanine and beta-alanine betaine. For background work see *Physiologia Plantarum* 109, 225–231, 2000; and *Plant Physiology* 126, 1241–1246, 2001. Candidates should have a Ph.D. in any area of plant biology. Strong skills in molecular cloning and biochemistry, as demonstrated by thesis work and publications, are required. Salary and start dates are negotiable. To apply send a copy of your curriculum vitae (preferably by e-mail) and contact information for three references to Dr. Bala Rathinasabapathi, Assistant Professor, Horticultural Sciences Department, University of Florida, Gainesville, FL 32611-0690; telephone 352-392-1928, ext. 323, fax 352-392-5653, e-mail brath@mail.ifas.ufl.edu.

Postdoctoral Research Associate

USDA/ARS, Western Regional Research Center
Albany, California
(Received 10/12)

A three-year position is available immediately on metabolic engineering of rubber biosynthesis in guayule and sunflower to modify rubber and latex yield, and rubber polymer molecular weight. Candidates should have a Ph.D. in

molecular biology or related science and experience with plant transformation. Experience in secondary product biochemistry and chemistry, *Agrobacterium*-mediated transformation, and EST data bank mining is desired. Appointment at GS11, carries a minimum starting salary of \$47,068 per annum plus benefits. Submit applications to Dr. Katrina Cornish, USDA/ARS, WRRRC, 800 Buchanan Street, Albany, CA 94710. USDA is an equal opportunity employer. Only citizens of the U.S. or Defense Treaty Nations are eligible for hire.

Postdoctoral Positions

Boyce Thompson Institute for Plant Research
Cornell University, Ithaca, New York
(Received 10/23)

Two positions at the level of postdoc are available for functional genomics approaches to address fruit ripening and nutritional quality in tomato and pepper. Competitive candidates will have a Ph.D. in plant molecular science, genetics, or a related field including publications in said areas. Previous experience with genomics approaches will be beneficial but is not required of those with excellent molecular skills. We are implementing strategies for microarray expression profiling, positional cloning, and large-scale development of gene repression lines to address global gene expression and gene function, respectively, as related to fruit development, ripening, and nutrient and flavor qualities. Objectives will include general analysis of gene expression during fruit development and ripening and expression profiling to gain insights into fruit nutrient quality. Position will require considerable interaction with collaborators and established molecular and/or genetics skills. Salary will be dependent upon experience with full benefits included. BTI is an equal opportunity employer. Women and minorities are encouraged to apply. Please send curriculum vitae and the names/contact information for three references to Jim Giovannoni, Boyce Thompson Institute for Plant Research, Tower Road, Cornell campus, Ithaca, NY 14853; telephone 607-255-1414, fax 607-255-1132, e-mail jjg33@cornell.edu. For information on the lab see <http://www.css.cornell.edu/research/USPSNL/GiovannoniLab/index.html>.

Postdoctoral Position

USDA/ARS—Plant Science Research Unit
University of Minnesota, St. Paul
(Received 10/23)

A position is available for a postdoctoral scientist to join a multidisciplinary team in St. Paul, Minnesota, investigating functional genomics of microbial interactions with the model legume *Medicago truncatula*. The project will entail generating promoter-trap mutants of *Medicago truncatula* using an *in planta* transformation system and a tissue culture transformation system. Mutants will be screened to identify genes involved in interac-

tions with pathogens and symbionts. A recent Ph.D. in plant biology or a related biological science is required. Skills in molecular biology and plant tissue culture and knowledge in plant-microbe interactions are desired. See www.afm.ars.usda.gov/divisions/hrd/hrdhomepage.html for employment restrictions and information to apply for the position. For specific information on the duties and responsibilities of this position or to submit an application, contact Dr. Deborah Samac, USDA/ARS/Plant Science Research, 495 Borlaug Hall, 1991 Upper Buford Circle, University of Minnesota, St. Paul, MN 55108; telephone 612-625-1243, fax 651-649-5058, e-mail debbyss@puccini.cdl.umn.edu. The USDA is an equal opportunity provider and employer. Women and minorities are encouraged to apply.

Postdoctoral Position

CNRS-UPS, Castanet-Tolosan, France
(Received 10/23)

A three-year postdoctoral position is available to work on the lipoxygenase pathway in plant-pathogen interactions. Our group is involved in a European project aimed at understanding the role of oxylipins in the defence of plants, using *Arabidopsis thaliana* as a model. The postdoctoral associate will create, analyze, and characterize transgenic *Arabidopsis* plants with altered levels of relevant enzymes. Characterization of the plants, in collaboration with partner laboratories, will include oxylipin profiling, plant gene expression analysis, and evaluation of resistance to pests and pathogens, notably fungal pathogens. A Ph.D. in a relevant discipline and training in basic molecular biology techniques are required. Experience in transgenic plant analysis and/or handling of *Arabidopsis* pathogens is desirable. The position will start on November/December 2001. Net salary will be around 19,600 per year (no requirement concerning citizenship). For background work from our group see (Rancé et al., PNAS, 95, 6554–6559; 1998 and references herein). To apply, send a curriculum vitae and contact information for three referees to Joëlle Fournier (fournier@smcv.ups-tlse.fr) or Marie-Thérèse Esquerré-Tugayé (esquerre@smcv.ups-tlse.fr), UMR 5546 CNRS-UPS, Pôle de Biotechnologies Végétales, 24 chemin de Borde-Rouge, BP17 Auzeville, 31326 Castanet-Tolosan, France; telephone +33-562-193-514, fax +33-562-193-502, web sites <http://www.smcv.ups-tlse.fr> <http://ifr40.smcv.ups-tlse.fr>.

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

Technical Position

Kansas State University, Manhattan
(Received 09/10)

A full-time research assistant position will be available in April 2002 to study the molecular genetics of plant-microbe interactions in the

Department of Plant Pathology at Kansas State University. Starting salaries will range from \$19,000 to \$25,000 plus full benefits (health, dental, life insurance, retirement contributions, sick leave, and vacation time). The successful candidate will be involved in laboratory experiments and management and supervision of students. Minimum qualifications are an M.S. or a B.S. in biochemistry, genetics, plant physiology, horticulture, or related field. Lab experience with molecular techniques and a desire and willingness to learn new techniques are essential. To apply, send cover letter, a detailed curriculum vitae or resume, and the names and contact information of three references to Dr. Jian-Min Zhou, Kansas State University, Department of Plant Pathology, 4024 Throckmorton Plant Sciences Center, Manhattan, KS 66506; e-mail jzhou@ksu.edu. Kansas State University is an equal opportunity/affirmative action employer.

Research Specialist/Associate Position University of Arkansas, Fayetteville (Received 09/10)

A research specialist or associate position is available immediately to study plant functional genomics and signal transduction related to disease resistance. This is a hard money-funded position with a starting salary of \$25,000–\$30,000 plus fringe benefits (retirement, medical insurance, etc.). Candidates should have an M.S. (research specialist) or Ph.D. (research associate) with a strong background in plant molecular biology, biochemistry, genetics, and/or pathology. To apply, please send a letter of interest, curriculum vitae, names, and contact information of three references to Dr. Yinong Yang, Department of Plant Pathology, 217 Plant Science Bldg., University of Arkansas, Fayetteville, AR 72701; fax 501-575-7601, e-mail yyiyang@uark.edu.

ASSISTANTSHIPS, FELLOWSHIPS, INTERNSHIPS

Graduate Fellowships

City University of New York, Bronx
(Received 09/13)

Graduate fellowships are available for students applying to the Plant Sciences Ph.D. Subprogram of the Biology Ph.D. Program of the City University of New York. The Plant Sciences Ph.D. program is a long-standing joint program between CUNY and the New York Botanical Garden. Research areas include biotechnology and metabolic engineering of plant biosynthetic pathways, natural product biochemistry, medicinal plants and economic botany, signal transduction in plants, plant-microbial interactions, *in vitro* production of plant natural products, plant development, ecology, biodiversity, and systematics. See the program web site for further information and application materials (<http://a32.lehman.cuny.edu/PlantPhD>). Deadline for application to the doctoral program is February 1, 2002.

Applications will be reviewed on a rolling basis. For additional information, contact Dr. Eleanor Wurtzel, Chair, Plant Sciences Ph.D. Program, Department of Biological Sciences, Lehman College, CUNY, 250 Bedford Park Blvd. West, Bronx, NY 10468; telephone 718-960-8643, fax 718-960-7348, e-mail etwlc@cunyvm.cuny.edu.

Graduate Fellowships and Assistantships
Michigan State University, East Lansing
(Received 09/24)

Michigan State University is pleased to announce graduate fellowships and assistantships in the plant sciences. Graduate assistantships are available in 12 departments or programs as listed below. In addition, the newly established Plant Science Fellowships provide outstanding candidates with funding for the first two years of study. Fellows may select a department upon enrollment, or if desired, may perform research rotations in any plant science-related laboratory on campus, regardless of department or program. After the first year, rotating students will choose a major professor and graduate degree program; after the second year, funding will be provided by the major professor and department. Each plant science fellow also will receive a \$2000 professional enhancement grant to facilitate travel to scientific meetings or other relevant activities. Participating departments and graduate programs include: Biochemistry and Molecular Biology (www.bch.msu.edu); Plant Biology (www.plantbiology.msu.edu); Plant Pathology (www.plantpathology.msu.edu); Cell and Molecular Biology (www.ns.msu.edu/cmb); Crop and Soil Sciences (www.css.msu.edu); Ecology, Evolutionary Biology and Behavior (www.msu.edu/~eebb); Entomology (www.ent.msu.edu); Forestry (www.for.msu.edu); Genetics (www.ns.msu.edu/genetics); Horticulture (www.hrt.msu.edu); the MSU-DOE Plant Research Laboratory (www.prl.msu.edu); W. K. Kellogg Biological Station (www.kbs.msu.edu) and Plant Breeding and Genetics (www.hrt.msu.edu/pbgrp). To obtain more information about the Plant Science Fellowships or Plant Science programs at Michigan State University, please contact Ms. Judy Ward, The Graduate School, Michigan State University, 118 Linton Hall, East Lansing, MI 48824; telephone 517-355-0301, e-mail wardj@msu.edu, or visit the MSU Plant Science Web Page at www.msu.edu/user/gradschl/plantsci.htm.

Graduate Assistantship in Horticulture
University of Florida, Gainesville
(Received 10/01)

A graduate assistantship at the M.S. level is available immediately at the Horticultural Sciences Department. The project focuses on a feasibility study to extract lycopene from culled tomato fruits. Lycopene is the red pigment in

ripe tomato fruits and has been implicated in anticancer and antioxidant roles in human nutrition. The student will learn and apply post-harvest ripening treatments and their effects on lycopene content. The assistantship is restricted to U.S. citizens and requires a minimum total score of 1000 on verbal and quantitative parts of the GRE and a 3.0 GPA minimum for a total of 4.0 in upper-division undergraduate courses. The assistantship will pay up to \$14,000 per year with a tuition waiver. To apply please mail a curriculum vitae and the names of three references to Bala Rathinasabapathi, Ph.D., Assistant Professor, Horticultural Sciences Department, University of Florida, PO Box 110 690, Gainesville, FL 32611-0690; telephone 352-392-1928 x 323, lab phone 352-392-3991, fax 352-392-5653, e-mail brath@mail.ifas.ufl.edu, Web site <http://www.hos.ufl.edu/sabaweb/>.

Graduate Assistantships
University of Florida, Gainesville
(Received 10/25)

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

Ph.D. Assistantships

Pennsylvania State University, University Park
(Received 10/31)

Four Ph.D. assistantships are available fall 2002 for an interdisciplinary project funded by the McKnight Foundation on root traits conferring phosphorus efficiency in soybean, in collaboration with South China Agricultural University. Students are sought in molecular biology (1), physiology (2), and agroecology (1). Degree options include Intercollege Graduate Program in Plant Physiology, and Ecological and Molecular Plant Physiology option of the Integrative Biosciences Graduate Program. For more information contact Jonathan Lynch, Department of Horticulture, Pennsylvania State University, University Park, PA 1680; telephone 814-863-2256, e-mail JPL4@psu.edu.

Graduate Research Assistantship
Clemson University, Clemson, South Carolina
(Repeat)

Interested applicants should contact Julia Frugoli, Department of Genetics and Biochemistry, 122 Long Hall, Clemson, SC 29634; telephone 864-656-1859, e-mail jfrugol@clemson.edu. (Details September/October 2001 *ASPB News*)

Graduate Assistantship
University of Louisiana, Lafayette
(Repeat)

To apply, please mail curriculum vitae to Regina McClinton, Assistant Professor, Department of Biology, PO Box 42451, University of Louisiana, Lafayette, LA 70504-2451; telephone 337-482-5153, fax 337-482-5834, e-mail rsm1241@usl.edu. Application materials can be downloaded from <http://www.usl.edu/Departments/BIOL/mcclinton.html>. (Details September/October 2001 *ASPB News*)

Graduate Research Assistantship
Kansas State University, Manhattan
(Repeat)

For more information about the research project, application requirements, and materials, please contact Dr. Jyoti Shah, Assistant Professor, Division of Biology, Kansas State University, Manhattan, KS 66506; telephone 785-532-6360, e-mail shah@ksu.edu. The KSU Web site is <http://www.ksu.edu>. Kansas State University is an equal opportunity employer and actively seeks diversity among its employees. (Details September/October 2001 *ASPB News*)

Graduate Research Assistantship
Texas A&M University, College Station
(Repeat)


Information about the TAMU Center at Beaumont can be viewed at its web site (<http://agresearch.tamu.edu/pubs/beaumont/rice.html>; see also <http://aesrg.tamu.edu/>), and the USDA research at the Beaumont Center is introduced at its web site (<http://usda-ars-beaumont.tamu.edu/>). For additional information about the assistantship and the research, please contact Dr. Lee Tarpley, Assistant Professor of Plant Physiology, Texas A&M Agricultural Research and Extension Center, 1509 Aggie Dr., Beaumont, TX 77713; telephone 409-752-2741, ext. 2235, fax: 409-752-5560, e-mail ltarpley@tamu.edu. EEO/AA. (Details September/October 2001 *ASPB News*)

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PS Form 3526, October 1999 (Reverse)

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● Our office telephone number is 301-251-0560

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