



NEWSLETTER

American Society of Plant Physiologists

Inside This Issue. . . .

2

Portland Symposia

4-5

Annual Meeting Items/
Minisymposia

6-7

Portland Program

8

Teaching Corner

9

News of Long and
Vanderhoef

10

ASPP Election/Other News

11-13

Public Affairs:
Sledow Testimony/USDA
Protocol/Senate and
Biotech/CNSF

15

Gatherings

23

Jobs

Deadline for the
July/August issue
of the ASPP Newsletter
is June 15, 1994.

Innovations and Tried-and-True To Mark Annual Meeting in Portland

Ort Promises Something Old, Something New—Something for Everyone

As many of you know, the most significant duty of the ASPP secretary is to serve as chair of the annual meeting program committee. Our committee is charged with the responsibility of orchestrating a meeting that highlights the most recent major advances in plant physiology, debuts new exciting research areas, provides a forum for the presentation and discussion of results that may form the basis for next year's breakthrough discoveries, promotes the exchange of ideas and experiences in the teaching of plant biology, informs the membership of societal and political issues that affect our profession, and finally, but by no means least important, creates an atmosphere in which old friendships can be renewed and new ones born.

Members of this year's committee are Ilya Raskin, Pam Green, David Ho, Frances DuPont, Doug Randall, Jim Siedow (*ex officio* as president-elect, to preside in 1994-1995), and Ken Beam (*ex officio*, executive director). We are excited about the program for this year's meeting and, on behalf of all the committee, I invite you to come to Portland and judge for yourself how well we have done at meeting the goals I've outlined above.

With more than 1000 presentations scheduled, we expect upwards of 1300 participants. In addition to familiar features of the meeting, we also have planned an offering of new ventures. This year inaugurates the Issues in Plant Biology

continued on page 3

HERE'S WHAT'S NEW IN PORTLAND

- THE INAUGURAL MARTIN GIBBS MEDAL SYMPOSIUM (SEE PAGE 2)
- NEW BI-ANNUAL SYMPOSIUM SERIES: ISSUES IN PLANT BIOLOGY, THIS YEAR DEVOTED TO TRANSGENIC PLANTS AND AGRICULTURE (SEE PAGE 2)
- SIX MINI-SYMPOSIA, THREE SELECTED FROM 'HOT TOPICS' AMONG ABSTRACTS (SEE PAGE 4)
- THREE PRE-MEETING WORKSHOPS (SEE PAGE 7)
- NEW NIGHT FOR THE ANNUAL BANQUET AND DANCE—COME ONE, COME ALL! (SEE PAGE 5)

1994 ANNUAL MEETING
AMERICAN SOCIETY OF PLANT PHYSIOLOGISTS

PORTLAND, OREGON
SATURDAY, JULY 30 - WEDNESDAY, AUGUST 3

♦♦♦♦ SYMPOSIUM ♦♦♦♦

♦ SATURDAY, JULY 30 ♦

BIOPHYSICAL ADAPTATION TO ENVIRONMENTAL STRESS

Organizer: Wendy Silk

Speakers and titles: M. Canny, Water stress and tension—Is the cohesion theory coming apart?; M. Koehl, Flow, flapping, and photosynthesis of flexible fronds; K. Niklas, Thigmomorphogenesis: Plant developmental responses to mechanical perturbation; R. Sharp, Physiology of root elongation at low water potentials: Advantage of a kinematic approach

♦ SUNDAY, JULY 31 ♦

ISSUES IN PLANT BIOLOGY SYMPOSIUM

COMMERCIALIZATION OF TRANSGENIC CROPS: OPPORTUNITIES AND ISSUES

Organizer: Robert T. Fraley

Speakers and titles: R. L. Fuchs, Food safety testing; W. Hiatt, Developing the flavor saver product; R. J. Goldberg, Concerns regarding new biotechnology products

♦ MONDAY, AUGUST 1 ♦

JOURNAL EDITORS' SYMPOSIUM

A GENETIC APPROACH TO UNDERSTANDING PLANT PHYSIOLOGY

Organizer: Brian A. Larkins, editor-in-chief, THE PLANT CELL

Speakers and titles: R. Last, Genetic approaches to understanding primary and secondary aromatic biosynthesis in *Arabidopsis*; R. Sederoff, Genes and proteins in wood formation of loblolly pine; S. Long, Genetic and biochemical studies of the *Rhizobium*-legume symbiosis; R. Davis, Use of *Saccharomyces cerevisiae* to study plants

♦ TUESDAY, AUGUST 2 ♦

MARTIN GIBBS MEDAL SYMPOSIUM

MOLECULAR BASIS OF PHYTOHORMONE ACTION

Organizer: Chris Somerville, 1993 winner of the Martin Gibbs Medal

Speakers and titles: J. Ecker, Molecular basis of ethylene action; M. Estelle, Genetic analysis of auxin action in *Arabidopsis*; E. Grill, Molecular mediators of abscisic acid action; D. Klessig, Mechanism of action of salicylic acid in plant defense

♦ WEDNESDAY, AUGUST 3 ♦

PRESIDENT'S SYMPOSIUM

UNRAVELING THE PATHWAY OF SIGNAL TRANSDUCTION

Organizer: Russell L. Jones, ASPP president

Speakers and titles: B. Staskawicz, Signal transduction events specifying disease resistance in *Arabidopsis thaliana*-*Pseudomonas* interactions; R. Crain, Inositol phosphate: Second messenger in plants and algae; A. Harmon, Protein kinases—Important links in signal transduction chains; S. Assmann, Signal transduction in guard cells

ASPP Officers and Staff

1993-1994 Officers

President

Russell L. Jones (510) 642-1486

President-Elect

James N. Siedow (919) 484-6523

Immediate Past President

Ralph S. Quattrone (919) 962-2981

Secretary

Donald R. Ort (217) 333-2093

Treasurer

Mark Jacobs (215) 328-8039

Chair, Board of Trustees

Larry N. Vanderhoof (916) 752-2167

Chair, Publications Committee

Stanley Roux (512) 471-4238

Elected Members

Frank C. Greene (708) 546-3541

Elaine M. Tobin (319) 825-7700

Kenneth Keegstra (517) 350-2270

Sectional Representations

Midwestern

Mary Jo Vesper (513) 229-2512

Northeastern

Bernard Rubinstein (413) 545-2542

Southern

William H. Outlaw II (904) 644-4020

Washington, DC

J. Michael Robinson (301) 904-6603

Western

Terr Lomax (503) 717-5278

Headquarters Office

15501 Monona Drive

Rockville, MD 20855-2768 USA

Phone: 301-251-0560 • Fax: 301-279-2996

Executive director, Kenneth M. Beam, ext. 15
(e-mail: kmbeam@access.digex.net)

Administrative Staff

Director of finance and administration,

Susan K. Chambers, ext. 11

(e-mail: chambers@access.digex.net)

Accountant, Thomas M. Dushney, ext. 30

Member services coordinator,

Sharon Y. Kelly, ext. 29

Receptionist, Estella Coley, ext. 22

Mail room clerk, Marian Osuji, ext. 12

Public Affairs Staff

Public affairs director, Brian M. Hyvis, ext. 11

(e-mail: bhyvis@access.digex.net)

Publications Staff

Publications director, Jody Carlson, ext. 17

(fax: 301-251-8913)

(e-mail: jcarlson@access.digex.net)

Managing editor, Plant Physiology,

Deborah L. Weiner, ext. 18

(e-mail: dweiner@access.digex.net)

Managing editor, THE PLANT CELL,

Judith L. Grollman, ext. 19

(e-mail: jgrollman@access.digex.net)

News and Reviews editor, THE PLANT CELL,

Rebecca Chasan, ext. 21

(e-mail: rchasan@access.digex.net)

Production editor, Plant Physiology,

W. Mark Leader, ext. 23

Production editor, THE PLANT CELL,

Catherine A. Balogh, ext. 16

Manuscript manager, Annette Kessler, ext. 20

Manuscript clerk, Kimberly A. Davls, ext. 24

Manuscript clerk, Sylvia J. Brakton, ext. 25

continued from page 1

Symposium for which the guiding principle and distinguishing character is to extend beyond research findings alone and incorporate potential applications, societal impact, possible dangers, and even surrounding political issues when pertinent. Robert Fraley has organized a program focusing on transgenic plants that we feel promises to set a high standard for this biennial symposium.

Six minisymposia are scheduled this year. Topics for the minisymposia were selected either from "hot topics" that the program committee identified when reviewing the submitted abstracts or from topics that we received over the past year in response to our solicitation of the membership for suggestions. We feel that using this dual approach has allowed us to identify a broad range of timely topics that will make the minisymposia a highlight of the meeting.

This year we will be experimenting with offering workshops on Saturday before the official opening of the meeting. In addition to two workshops sponsored by the Education Committee, we are anxious to see the interest in an all day "hands-on" workshop on two-dimensional gel electrophoresis that Tom Elthon has agreed to organize off site at nearby Reed College.

On the social side, we are going to take advantage of the perfect weather that we have been guaranteed in Portland and have our annual meeting banquet and dance out of doors. Susan Chambers, ASPP's director of finance and administration, thus staff meeting coordinator, has promised that several of Portland's 16 micro-breweries will be demonstrating the results of their barley aleurone research at the picnic, which is reason enough for some of us to make the trip.

The program committee is firmly committed to the notion that ASPP's annual meeting must continue to evolve and change. Some of the things that have been successful in the past may be less so now, and it is as important to identify those as it is to acknowledge which of our newest experiments have not achieved expectations. With your registration package in Portland you will receive an evaluation questionnaire that I encourage you take time to fill it out before you leave Portland, as we want and value your input.

So, if Dave Longstreth can come up with a good t-shirt design, we will have all the ingredients for a great meeting. Hope to see you in Portland.

Don Ort
ASPP Secretary
University of Illinois



The Portland, Oregon, skyline, circa 1990. Photo by Larry Geddis, property of the Portland/Oregon Visitors Association.

The ASPP NEWSLETTER is distributed to all ASPP members and is published six times annually, in odd-numbered months. It is edited and prepared by ASPP staff from material provided by ASPP members and other interested parties. Copy deadline is about the fifteenth day of the preceding even-numbered month (e.g., December 15 for January/February publication). Submit copy by e-mail whenever possible; submit all other copy by mail, *not by fax*. Contact: Jody Carlson, Editor, ASPP NEWSLETTER, 15501 Monona Drive, Rockville, MD 20855-2768 USA; e-mail: jcarlson@access.digex.net; telephone: 301-251-0560, ext. 17.

Ballot Deadline:
June 24
Remember to vote
for ASPP officers and
mail in your ballot today.

PLANNING FOR

Save on Airfare

To save yourself money on airfare to Portland, make your reservations for the annual meeting early and make them through Van Slycke & Reeside Travel in Washington, DC. VS&R has negotiated discounts on United Airlines for ASPP annual meeting attendees and their family and friends. You can save 5% off the lowest published fares (restrictions apply) and 10% off unrestricted coach fares, and VS&R will contact you if fares go down once you are ticketed to advise you on how to obtain a refund.

Take advantage of these savings today by calling the VS&R executive accounts desk at 1-800-321-7173. Refer to account number 9021.

SIX MINISYMPOSIA TO BE OFFERED AT ANNUAL MEETING

• Monday, August 1

Self-Incompatibility

Organizer: Bruce McClure

Speakers and titles: B. McClure, Self-incompatibility in *Nicotiana*; M. E. Nasrallah, Transgene-induced mutations in the pollination responses of *Brassica*: Receptor protein kinase-based signaling in self-incompatibility; C. Franklin, Molecular and cellular studies of self-incompatibility in *Papaver rhoeas*

Posttranscriptional Control of Nuclear Gene Expression

Organizer: William Thompson

Speakers and titles: P. Green, Determinants of mRNA instability in plants; M. Mehdy, Fungal elicitor-induced destabilization of an mRNA encoding a bean proline-rich protein; W. Thompson, A novel light response mechanism modulating ferredoxin mRNA abundance in green leaves

• Tuesday, August 2

Phytoremediation: Restoration of the Environment by Plants

Organizer: Ilya Raskin

Speakers and titles: I. Raskin, Phytoremediation—Using plants to clean up soils and waters contaminated with heavy metals; A. J. M. Baker, Metal hyperaccumulation by plants: the ecophysiological phenomenon and its possible exploitation in soil cleanup technology; R. L. Chaney, Characterization of zinc and cadmium hyperaccumulation by, and extreme Zn requirement of, *Thlaspi caerulescens*, a candidate phytoremediation crop

Taxol and Taxanes

Organizer: Richard Arteca

Speakers and titles: R. Arteca, Plant cell, tissue and organ culture as a source of taxol and related taxanes; R. G. Kelsey, Variation in the concentrations of brevifoliol, taxol, and 10-deacetylbaccatin III in tissues of *Taxus brevifolia*; R. Croteau, Biosynthesis of taxol in *Taxus*

• Wednesday, August 3

Photosynthesis: Recent Advances in Structure and Function

Organizer: Don Bryant

Speakers and titles: W. Kuhlbrandt, Atomic model of the plant light-harvesting complex; W. A. Cramer, Structure aspects of the cytochrome *b6/f* complex: Structure of cytochrome *f*—implications for electron transfer and protein translocation; J. H. Golbeck, Structure and function of the photosystem I reaction center

Potassium Channels and Guard Cell Osmoregulation

Organizer: Julian Schroeder

Speakers and titles: N. Moran, From K channels regulation to the control of volume changes of motor cell protoplasts; J. Schroeder, Recent advances in understanding guard cell signal transduction and high-affinity K transporters; E. Zeiger, Guard cell osmoregulation by potassium and sucrose

* * * * *

**ANNUAL BANQUET AND DANCE TO BE HELD TUESDAY
SO THAT MORE CAN ATTEND**

The diehard dancers among you know that the banquet at the ASPP annual meeting is THE place to be. Sad to say, in years past many of you haven't stuck around long enough to take part in the fun. To remedy that situation, this year's dinner and dance are to be held on a different night. Instead of waiting until Wednesday night, the closing night of the meeting, to kick up our heels, this year we're going to do it on Tuesday night. The more the merrier, as the saying goes—and we hope many more of you will join us for an evening of good food, good friends, and relaxation.

This year, we will "picnic" under the stars with a feast of food and drink all raised, grown, or produced in Oregon—including the wine and several selections from Oregon's microbreweries. And we'll dance until midnight to the music of Panama—a band that has passed a stringent danceability test, for those of you who worry about these things.

So, when you mail in your meeting registration form, remember to buy a ticket for the "Picnic in Portland" dinner/dance. Tickets will also be sold on site at the ASPP office.

Y'all come!!



**O'NEILL WILL HIGHLIGHT LUNCHEON SPONSORED BY
WOMEN IN PLANT PHYSIOLOGY**

The Committee on the Status of Women in Plant Physiology works to promote the inclusion of female plant physiologists in all aspects of our Society and profession. Our guest speaker at the Portland meeting will be Dr. Sharman O'Neill from the University of California at Davis. Dr. O'Neill's lecture, tentatively titled "Molecular analysis of postpollination flower development," will be presented at noon on Tuesday, August 2. The lecture will be followed by an open meeting with the Committee on the Status of Women in Plant Physiology and an informal lunch.

Each year the program sponsored by our committee has attracted a large audience. We encourage everyone to purchase their tickets for this lunch at the time of conference registration. A number of corporate sponsors have generously provided funds to subsidize this lunch so that reduced charge lunch tickets will be available for graduate students.



**NEWLY CONSTITUTED COMMITTEE ON MINORITY AFFAIRS
TO SPONSOR BREAKFAST MEETING**

The enthusiastic response to the minority initiative spearheaded by Drs. Sheila Fennoy and Frank Greene at the 1993 ASPP Annual Meeting in Minneapolis has resulted in the establishment of the Committee on Minority Affairs. This ad hoc committee will have as its primary objectives to develop strategies to encourage greater participation by minorities in ASPP and to provide opportunities for underrepresented minorities in the field of plant physiology.

The Committee on Minority Affairs will meet at the 1994 annual meeting in Portland, Oregon, to discuss plans and initiatives, and it will also sponsor a breakfast for all meeting attendees on Monday, August 1, from 7:00 to 8:30 AM. The program for this breakfast is not yet definite, but substantive issues and concerns will be addressed and all interested attendees are strongly encouraged to attend and participate in the discussion.

Dr. William Gordon (Howard University) is serving as the chair of the committee. The other members are: Dr. Deborah A. Cook (Clark Atlanta University), Dr. Sheila Fennoy (University of California, Riverside), Dr. Frank Greene (U.S. Department of Agriculture, Athens, GA), Dr. Emil Orozco (DeKalb Plant Genetics, Mystic, CT), Dr. Aurea Vasconcelos (Rutgers University), and Dr. Eugene Vigil (U.S. Department of Agriculture, Beltsville, MD). All committee members will serve a two-year term, from 1994 to 1996. Ken Beam, executive director of ASPP, is an ex officio member of the committee, and Deborah Weiner, managing editor of *Plant Physiology*, serves as staff liaison.

Register Early—
Save \$40!

Early bird registration for the
annual meeting must be
received by June 20.

P O R T L A N D



PORTLAND PROGRAM AT A GLANCE

Shown below and on the next page is an abbreviated version of the preliminary program planned for the 1994 ASPP annual meeting at the Oregon Convention Center in Portland, Oregon, July 30-August 3. A more detailed version is printed in the abstract supplement to the May issue of *Plant Physiology* and in the front of the registration package, both of which were mailed to all ASPP members. The official final program will be included among registration materials that will be given to all meeting attendees.

Saturday, JULY 30

- Pre-Meeting Workshops
 - Two-Dimensional Gel Electrophoresis (8:30 AM - 4:30 PM, Reed College)
 - Setting Up a Lab Course (NOON - 1:00 PM)
 - What Do Our Tests Tell Our Students about Themselves and about Science? (1:00 - 2:00 PM)
- Opening Ceremonies
2:00 - 2:20 PM
- Symposium I: Biophysical Adaptation to Environmental Stress
2:20 - 5:30 PM
- Committee on Public Affairs Presentation
5:30 - 6:30 PM
- Opening Reception and Mixer
6:30 - 10:00 PM

Sunday, JULY 31

- Symposium II: Issues in Plant Biology: Transgenic plants and agriculture
8:30 - 11:40 AM
- Poster Presentations—Authors with posters (see sidebar for areas)
NOON-2:30 PM
- Oral Presentations
2:30 - 6:00 PM
 - Photosynthesis: All Aspects, I
 - Molecular Biology: Hormonal/Environmental Regulation, I
 - Stress: Water, Minerals, and the Like, I
 - Signal Transduction
 - Adaptation to Unusual Environments
 - Root-Shoot Interactions/Communications
- Awards Ceremony/Shull Award Address—"Do Plants Take Aspirin?"
Followed by reception open to all attendees.
8:00 - 9:00 PM

Monday, AUGUST 1

- Breakfast, Committee on Minorities in Plant Physiology
7:00 - 8:30 AM
- Symposium III: Journal Editors' Symposium:
A Genetic Approach to Understanding Plant Physiology
8:30 - 11:40 AM
- Poster Presentations—Authors with posters (see sidebar for areas)
NOON - 2:30 PM
- Mini-Symposia
2:30 - 6:00 PM
 - Self-Incompatibility
 - Posttranscriptional Control of Nuclear Gene Expression

Subject Areas for Poster Presentations

Sunday/Monday Poster Sessions

- Adaptation to Unusual Environments
- Cell Development/Developmental Processes
- Cell Structure, Structural Molecules/Complexes
- Interactions of C and N Metabolism
- Lipids, Oils, Waxes, and Related Molecules
- Mitochondria and Respiration
- Molecular Biology: Hormonal/Environmental Regulation
- Molecular Biology: Organelles
- New Techniques and Methods
- Photosynthesis: All Aspects
- Natural Products, Medicinals, Ethnobotany
- Protein Kinases, Phosphatases, and G-Proteins
- Protein Targeting, Import, and Chaperones
- Root Physiology/Development
- Root-Shoot Interactions/Communications
- Signal Transduction
- Stress: Water, Minerals, and the Like

Tuesday/Wednesday Poster Sessions

- Other
- Assimilate Partitioning
- Cell/Tissue Culture
- Enzymology and Metabolism
- Gene Expression
- Growth Regulators and Hormones
- Membranes, Ion Channels, and Transport Processes
- Molecular Biology: Gene Structure/Characterization
- Plant Interactions with Other Organisms
- Seed Development/Physiology
- Stress: Temperature
- Teaching

- Oral Presentations
2:30 - 6:00 PM
 - Photosynthesis: All Aspects, II
 - Stress: Water, Minerals, and the Like, II
 - Protein Targeting, Import, and Chaperones; Mitochondria and Respiration; Molecular Biology: Organelles
 - Protein Kinases, Phosphates, and G-Proteins
 - Cell Structure, Structural Molecules/Complexes
- Evening Workshops
 - Instrumentation (8:00 - 9:00 PM)
 - Federal Funding Opportunities in Plant Biology for Research and Education (8:00 - 10:00 PM)

Tuesday, AUGUST 2

- Plant Runners' Stampede
6:30 - 8:00 AM
- Symposium IV: Martin Gibbs Medal Symposium:
Molecular Basis of Phytohormone Action
8:30 - 11:40 AM
- Luncheon, Committee on the Status of Women in Plant Physiology
"Molecular Analysis of Postpollination Flower Development"
NOON - 2:30 PM
- Poster Presentations—Authors with posters (see sidebar on page 4 for areas)
NOON - 2:30 PM
- Mini-Symposia
2:30 - 6:00 PM
 - Phytoremediation: Restoration of the Environment by Plants
 - Taxol and Taxanes
- Oral Presentations
2:30 - 6:00 PM
 - Cell Development/Developmental Processes, I
 - Molecular Biology: Hormonal/Environmental Regulation, II
 - Photosynthesis: All Aspects, III; New Techniques and Methods
 - Transgenics and Biotechnology
 - Water, Minerals, and the Like, III
 - Interactions of C and N Metabolism
- ASPP Annual Business Meeting
6:00 - 6:30 PM
- ASPP Picnic in Portland
6:30 PM - MIDNIGHT

Wednesday, AUGUST 3

- Mini-Symposia
8:30 AM - NOON
 - Structural and Functional Aspects of Photosynthesis
 - Potassium Channels and Guard Cell Osmoregulation
- Oral Presentations
8:30 AM - NOON
 - Cell Development/Developmental Processes, II
 - Root Physiology/Development
 - Other
 - Molecular Biology: Hormonal/Environmental Regulation, III
 - Natural Products, Medicinals, Ethnobotany
 - Lipids, Oils, Waxes, and Related Molecules
- Poster Presentations—Authors with posters (see sidebar on page 4 for areas)
NOON - 2:00 PM
- Symposium V: ASPP President's Symposium:
Unraveling the Pathway of Signal Transduction
2:00 - 4:20 PM

PRE-MEETING WORKSHOPS SCHEDULED

Make arrangements
NOW!
Arrive in Portland early
and
take advantage of
three pre-meeting
workshops set for

Saturday, July 30

•8:30 AM-4:30 PM
Reed College
**Two-Dimensional
Gel Electrophoresis**
Organizer:
Tom Elthon
University of Nebraska
(Attendance limited to 30;
fee \$60; see sign up sheet in
center of this newsletter.)

Two Workshops Sponsored by
the ASPP Education Committee

•NOON-1:00 PM
Oregon Convention Center
Setting up a Lab Course
Organizer:
Carol Reiss
Cornell University

•1:00-2:00 PM
Oregon Convention Center
**What Do Our Tests Tell
Our Students about Themselves
and about Science?**
Organizer:
Sheila Tobias
Noted author and speaker on
issues of science education

Teaching Corner

Compiled by Susan Singer,
Biology Department, Carleton College,
Northfield, MN 55057, e-mail
ssinger@carleton.edu

Educational Happenings at the Annual Meeting

The Education Committee has been planning a diversity of programs for educators at the Portland meeting. Here is a preview . . .

• Education Booth

Once again, the Education Booth will have exhibits and demonstrations by ASPP members and will serve as a center for informal discussion on issues related to education. This year the education posters will be in the same space as the Education Booth so we hope to see even more interactions between people interested in new teaching ideas. Here are some things to look for at the booth: Kathleen Clark, a librarian at Purdue with a plant physiology background, will demonstrate how to access a plethora of educational resources through the internet; Dina Mandoli and Carl Pike are devoting one section of the booth to tips on how to make an effective presentation, which should be helpful for all of us; Carol Reiss and her colleagues at Cornell have developed a photosynthesis teaching video with live actors, including André Jagendorf, portraying live molecules.

• Education Workshops

Make sure you arrive early for the education workshops. They will be starting at noon on July 30, the first day of the meeting. We have invited Sheila Tobias to speak on curricular goals vs. evaluation strategies. Sheila has written on women and minority issues in science education, math anxiety, and what constitutes effective and appropriate teaching in undergraduate science courses. She lectures widely on topics related to science education and is invariably a dynamic and thought-provoking speaker. She is currently preparing a book with Jacqueline Raphael entitled *In-class Examinations: New Theory, New Practice For the Teaching and Assessment of College-level Science*.

We have also invited Carol Reiss to run a workshop on setting up a lab course. This will be a pragmatic, interactive work-

shop for anyone who is just starting to teach a lab course or is looking for helpful suggestions. Carol has organized the plant physiology labs at Cornell for over a decade and is basing her workshop on her experiences with the course at Cornell and her efforts to get new teachers launched with their own lab courses at other institutions. Carol recently authored *Experiments in Plant Physiology* (Prentice Hall, 1993, ISBN 0-13-701285-3).

• Funding for Educational Efforts

Terry Woodin, Program Director for Biology in the Division of Undergraduate Education at NSF, will be one member of a panel on opportunities for federal funding at the annual meeting. There are several programs at NSF to support efforts to improve education. Come to the panel and see what funding might be available to get your innovative idea off the ground.

• High School Teachers

The Education Committee has invited Portland area teachers to attend the annual meeting, and the ASPP will waive their registration fees. This year we are also welcoming students that have worked with these teachers on special projects. They have the opportunity to present a poster reporting on their project in conjunction with the Education Booth. We're not sure yet if any students will be interested in participating, but we are certainly encouraging them. Keep your eyes open for the high school teachers and their students at our meeting. A warm welcome would certainly be appreciated. Teachers that have attended in the past have found the meeting to be a great way to update their plant biology. Kathie Fishbeck began issuing invitations quite early this year in hopes of increasing the number of participants.

• 12 Outreach

• Fast Plants Workshop

Paul Williams's Fast Plants program at the University of Wisconsin at Madison continues to offer inspiring workshops on educational uses of rapid-cycling Brassicas. Numerous ASPP members have had terrific experiences using these plants in outreach programs and in their own classrooms. If you're interested, workshops will be held October 28-29, 1994, and February 10-12, 1995, in Madison. Contact the Fast Plants office at 800-462-7417. (See related item on page 9.)

• Project Link

Project Link, developed by Suzette Hunt, science education specialist from Minneapolis, is designed to: encourage high school age girls to increase their commitment to math and science studies; promote interaction between teachers and women in mathematical and scientific fields; introduce students to women in math and science-related careers; and relate classroom learning to existing career situations; and develop. This program links a research scientist with a classroom teacher and includes three visits of the scientist to the teacher's classroom. During the first visit the scientist explains her background and work to the group. During the last two visits, the scientist implements a project in the classroom. The class then visits the scientist's work place. This is one of many successful programs that are being developed. This program has been extremely successful in Minnesota school districts and a national replication project is underway. If you are thinking about involvement with precollege students, you may want to talk with Suzette about what has worked well for her program. She can be reached at 612-424-9444.

• Perspectives on Science

The Los Alamos National Laboratory's Science Education and Outreach group publishes a quarterly volume entitled *Perspectives on Science*, which is available free of charge. The winter '94 issue focused on science literacy with articles including "Tips for Setting Up a Hands-On Science Laboratory," "What is Science Literacy," and "Who's Who and What's What in Science Education Reform." The audience is primarily precollege math and science teachers. For further information, contact Tamara Wells-Banar at Los Alamos Labs (telephone 505-667-1919, fax 505-665-4093, e-mail twells@lanl.gov).

BRING YOUR
TEACHING IDEAS TO
PORTLAND!



SHARON LONG NAMED HOWARD HUGHES INVESTIGATOR



Dr. Sharon R. Long, Stanford University plant biologist, who has recently been selected to be a Howard Hughes Medical Institute Investigator.

The first-ever Howard Hughes Medical Institute (HHMI) award to a plant biologist has gone to ASPP member Dr. Sharon R. Long, professor of biological sciences at Stanford University and professor, by courtesy, of biochemistry in the Stanford School of Medicine. HHMI, the largest private philanthropy in the United States, spent \$268 million on basic biomedical research in 1993. Long will join nearly 275 other researchers nationwide who benefit from the Institute's support.

Under the terms of her award, Long is required to devote 75 percent of her time to her research, which focuses on plant-microbe interactions, in particular alfalfa and the soil bacterium *Rhizobium meliloti*. In a recent interview with a Stanford University newspaper, Long indicated that she would spend most of her non-research time in teaching.

In the same interview, Dr. Long said that one of the chief benefits of the Hughes award is that it gives her the freedom to "explore in depth the chemical signals that control cell fate and gene expression" and to undertake some research projects "that are probably considered somewhat risky within the plant biology community."

Being named an HHMI investigator is the most recent in a string of honors for Long. She was awarded a MacArthur Foundation Fellowship in 1992, and last year she was elected to membership in the National Academy of Sciences. In 1989, Dr. Long won ASPP's Charles Albert Shull Award "for her pioneering research in plant-microbe interactions."

Long, who joined ASPP in 1974, is currently on sabbatical leave from her positions at Stanford and from her position as an associate editor of ASPP's journal *Plant Physiology*. During her sabbatical, she is helping in the effort to devise a new curriculum for plant biology at Stanford, and she is serving on a National Research Council committee whose mission is to encourage undergraduate science literacy in the United States.

Sharon Long will be one of the featured speakers at the Portland annual meeting in Brian Larkins's symposium, A Genetic Approach to Understanding Plant Physiology. She will speak on "The Genetic and Biochemical Studies of the *Rhizobium*-Legume Symbiosis."

Vanderhoef Is Chancellor at UC-Davis

On Wednesday, April 6, Larry N. Vanderhoef was named to succeed Theodore L. Hullar as chancellor of the Davis campus of the University of California. Vanderhoef is a long-time ASPP member (since 1966) who served two three-year terms as treasurer (1982-1988) and is currently serving a three-year term on the executive committee as chair of ASPP's board of trustees.

Vanderhoef received his bachelor's (1964) and master's degrees (1965) from the University of Wisconsin, Milwaukee, and his Ph.D. (1969) from Purdue University. He joined the faculty of the University of Illinois in 1970 and served as chair of the plant biology department from 1977 to 1980. He was provost of the division of Agricultural and Life Sciences at the University of Maryland from 1980 to 1984, when he went to UC-Davis to serve as executive vice chancellor. In addition to his administrative posts, he holds positions at Davis as a professor in the Col-

continued on page 10

Chasan Features Wisconsin Fast Plants in: THE PLANT CELL

Wisconsin Fast Plants are highlighted in an informative feature article in the April 1994 issue of THE PLANT CELL. ASPP science writer Rebecca Chasan, news and reviews editor of THE PLANT CELL, provides an in-depth look at Paul Williams's innovative teaching and research device and its utility in classrooms at virtually all levels of plant biology education.

The article is recommended reading for all who are interested specifically in teaching plant biology and generally in improving science education so as to provide the coming generations of plant scientists and a science-literate citizenry.



Dr. Larry N. Vanderhoef, chair of ASPP's board of trustees, was appointed recently to the post of chancellor of the Davis campus of the University of California.

continued from page 9

lege of Letters and Science and as a botanist at the experiment station.

Vanderhoef has served the Davis campus during particularly difficult financial times in California. During his tenure, and with his leadership as provost and executive vice chancellor and recently as acting chancellor, the UC-Davis campus has undertaken a successful process to restructure the campus's academic, administrative, and student support programs, accommodating a cut of more than \$40 million in state funds.

In announcing Vanderhoef's appointment, Jack W. Peltason, president of the UC board of regents, said, "Larry Vanderhoef has proven himself to be a dedicated and capable leader with a deep commitment to the Davis campus and the University of California. He combines a distinguished record in teaching and research with an excellent understanding of the importance of the public service component of the University's mission."

Vanderhoef, in turn, said, "... I am thrilled by the prospects and the potential of this great university because, despite severe financial challenges, we have been able to collegially engage in self-renewal—perhaps the toughest test of greatness of any institution."

CCRC Offers Summer Courses on Techniques for Characterization of Complex Carbohydrates

Four courses will be offered between August 1 and September 2 at the Complex Carbohydrate Research Center (CCRC) of the University of Georgia, Athens:

- August 1-5: Separation and Characterization of Glycoprotein Oligosaccharides is intended for scientists with little experience in carbohydrate analysis.
- August 8-12: Structural Analysis of Oligosaccharides is intended for scientists with some experience with glycoconjugates or for those who have completed the first course
- August 22-26: MS and MS/MS Analysis of Glycoconjugates is intended for scientists with some experience with glycoconjugates and a basic understanding of mass spectrometry.

Buchanan, Moore, Greene, Vierling Are Nominees for ASPP Offices

Ballots Due at Headquarters by June 24

Ballots have been mailed for the 1994 election of officers of the American Society of Plant Physiologists. It is important to mark your ballot and return it as soon as possible in the pre-addressed envelope provided to you. All ballots received by the end of the work day, Friday, June 24, will be counted.

Nominees this year are: for president-elect (to preside in 1995-1996, succeeding James N. Siedow), Bob B. Buchanan (professor of plant biology, University of California at Berkeley) and Thomas S. Moore, Jr. (professor of botany and adjunct professor of biochemistry, Louisiana State University); for a three-year term as elected member of the executive committee, Frank Greene (director, USDA/ARS Russell Agricultural Research Center, Athens, Georgia) and Elizabeth Vierling (associate of professor of biochemistry and molecular and cellular biology, University of Arizona).

Also nominated for approval by the members of ASPP are two candidates for corresponding membership (life member-

ship and a subscription to an ASPP journal of the member's choosing), Hiroh Shibaoka (professor of biology, Osaka University) and Nobutaka Takahashi (executive director, RIKEN).

June 15 Is Deadline for Multi-User Biological Equipment Program

Attention is called to the June 15, 1994, deadline for grant proposals for the Multi-user Biological Equipment (MBE) program of the National Science Foundation. The MBE program provides support for the purchase of instruments that will be shared by a number of funded investigators and the cost of which ranges between \$20,000 and \$400,000. The funds can be used to purchase single pieces of equipment or to establish instrumentation resources of several items that have a related purpose. Capital cost matching in the range of 30 to 50% is expected.

For details of this program, see NSF program announcement number 92-126, or contact Dr. Mike Lamvik, telephone 703-306-1469, e-mail mlamvik@nsf.gov.

FULBRIGHT SCHOLAR AWARDS

Fulbright Scholar opportunities are available for university lecturing or advanced research in nearly 140 countries. Basic eligibility requirements for the award are U. S. citizenship and the Ph.D. or comparable professional qualifications. For lecturing awards, university or college teaching experience is expected. Language skills are needed for some countries, but most lecturing assignments are in English. A single deadline of August 1, 1994, exists for research or lecturing grants to all world areas. Other deadlines are in place for special programs. For further information on how to apply, contact the Council for International Exchange of Scholars, 3007 Tilden Street, N.W., Suite 5M, Box GNEWS, Washington, DC 20008-3009; telephone 202-686-7877, email (application requests only) cies1@gwuvvm.gwu.edu.

- August 29-September 2: Fundamentals of ^1H and ^{13}C will focus on ^1H and ^{13}C , one- and two-dimensional NMR spectroscopy as applied to carbohydrates.

Experience with basic biochemical techniques is a prerequisite for participation in the courses. Each course is limited to 10 participants. The cost of registration (including lunch) per course is \$500 for individuals from non-profit institutions, \$1,100 for others. Registration does not include lodging and travel expenses.

The courses are supported jointly by the DOE Plant and Microbial Carbohydrate Center and the NIH Biomedical Carbohydrate Resource Center of the CCRC. For further information or to apply for the courses, contact: Dr. Roberta K. Merkle, Technical Director for Biomedical Carbohydrates, Complex Carbohydrate Research Center, 220 Riverbend Road, University of Georgia, Athens, GA 30602-4712; telephone 706-542-4402, fax 706-542-4412.

Public Affairs

ASPP PRESIDENT-ELECT SIEDOW TESTIFIES IN SUPPORT OF DOE BASIC PLANT SCIENCE RESEARCH

In testimony presented to the House of Representatives Appropriations Subcommittee on Energy and Water Development April 11, ASPP president-elect James Siedow supported funding basic research within the Department of Energy's Division of Energy Biosciences.

Siedow said a transfer of funds to Energy Biosciences from much larger but related applied programs that have received substantial increases during the past few years would produce fundamental knowledge needed for development of technologies. "The Division of Energy Biosciences provides the essential fundamental underpinning that makes developments in much larger applied programs possible," Siedow said.

The Division of Energy Biosciences funds research in the plant sciences and non-medical microbiology that leads to development of renewable energy resources, improvement of environmental quality related to energy production, and increased competitiveness of the United States in high technology markets. The administration's proposal for Energy Biosciences for Fiscal Year 1995 is \$25.9 million.

Siedow pointed out several examples of research supported by Energy Biosciences that addresses its major goals. One example is the development of plants that produce plastic by ASPP member Chris Somerville, who conducted the research at the Michigan State University-DOE Plant Research Laboratory. Although this plant-produced plastic has the properties of petroleum-based plastic, it has the decided advantage of being both renewable and biodegradable, Siedow noted. ASPP awarded Somerville its distinguished Martin Gibbs Medal last year in recognition of his work. A national news magazine ranked this research as one of the ten most important scientific achievements of 1992, Siedow noted.

A new technology for cleaning up toxic metal pollution of waters and soils



Dr. James N. Siedow (Duke University), ASPP's president-elect, testifies before the House of Representatives Subcommittee on Energy and Water Development on behalf of funding for the Division of Energy Biosciences of the Department of Energy.

through the use of plants has been developed with the help of results from basic research supported by the Division of Energy Biosciences, Siedow said. This new technology, called phytoremediation, involves the use of specially selected and engineered plants that can absorb large concentrations of toxic metals in their roots and shoots. Once these plants remove toxic metals from the soil, the plants can be dried, composted, or combusted for further concentration of the metals in the plant tissues, making the residue a more valuable source for metal recovery. At the same time costly disposal costs of toxic metals are avoided.

Siedow said that the costs of conventional treatment of toxic metal-contaminated water and soil is expensive and difficult, costing at least \$100 to \$200 per ton of soil. Phytoremediation makes it possible to treat sites at a cost of an estimated \$15 to \$50 per ton of soil, even when analytical, regulatory, and hazardous waste disposal costs are included. Basic research leading to the technology of phytoremediation is just one of the examples of how the Subcommittee's support of the Division of Energy Biosciences will greatly aid vitally needed cleanups, Siedow noted.

ASPP CONCERNS ON ZERO RATING FOR BASIC RESEARCH ARE BEING CONSIDERED IN USDA PROTOCOL REVISION

A controversial protocol developed after a panel meeting in 1992 and used at USDA to evaluate how research may contribute to sustainable agriculture continues to undergo revision. ASPP has been seeking appropriate revision of the protocol. The work done on the revision by a panel in Detroit on December 20 and 21,

1993, has been forwarded to the office of Alice Jones, Interim Director of the Sustainable Agriculture Research and Education (SARE) Program at USDA.

Kenneth Keegstra served on the panel in Detroit as ASPP's representative. One

continued from page 11

of the points that Keegstra emphasized was the problem that the protocol caused by ranking fundamental research at zero. Another problem with the protocol was that it did not classify research as contributing to sustainable agriculture unless it contributed to sustainable agriculture in at least four of seven categories. As a result, research that made a substantial contribution to sustainable agriculture in one or two categories only would not receive the favorable ranking of contributing to sustainable agriculture.

The categories that have been in the protocol are: Integrated System of Plant and Animal Production Practices; Satisfy Human Food and Fiber Needs; Enhance Environmental Quality; Natural Resource Conservation; Biological Resource Utilization; Economic Viability; and Quality of Life (of farmers, rural communities, and society as a whole).

Following the December 1993 panel meeting, changes now being considered at USDA for the protocol would not rate fundamental research at zero any longer. Instead, there would be four new sections in which research would be classified according to its contribution to sustainable agriculture. One section would include research which contributes to sustainable agriculture in a systems approach. This research would be rated as contrib-

uting to sustainable agriculture in several categories, possibly four or more. Another section would be a component section that would include research that contributes to sustainable agriculture in a single category. A third section would include research that could not be ascertained as contributing to sustainable agriculture.

A fourth section would include research that was not relevant to or possibly not consistent with sustainable agriculture. Jones told ASPP staff that officials are trying to determine the best descriptive label for this section.

James Cook, chief scientist of the National Research Initiative Competitive Grants Program (NRICGP), is taking an active role in pursuing needed improvements in the protocol. He served on the December panel and is one of a small number of USDA officials who is completing revisions. The revisions discussed above concerning creation of four sections are still in a draft stage. Once a draft revised protocol is agreed upon, it will likely be tested at 16 state agricultural experiment stations over the summer and may be ready for broader implementation within the Agricultural Research Service (ARS) and Cooperative State Research Service (CSRS) by the fall. The draft revision could undergo further changes before it is tested at the experiment stations.

ASPP has been working with USDA,

CoFARM, and the Plant and Soil Sciences Forum on problems with the protocol. In a letter responding to a letter from CoFARM, John Patrick Jordan, administrator of the Cooperative State Research Service, noted that the protocol was used in 1993 by ARS to evaluate 1,200 research projects. CSRS used the protocol in 1993 in an experimental mode at four state agricultural experiment stations. The sustainable agriculture evaluation procedure consists of using teams of individuals with knowledge and expertise in sustainable agriculture to evaluate individual projects. The review teams have the fundamental composition mandated for the Regional Administrative Councils of SARE (farmers and ranchers, representatives of non-profit private organizations, agribusiness, government agency scientists, and researchers from academia), Jordan noted.

Jordan said the panel which met in December 1993 (on which Keegstra served) was convened to evaluate the protocol and make appropriate recommendations for the protocol for 1994. Jordan added that fundamental research was a major topic of discussion at the December meeting. ASPP is actively supporting inclusion of appropriate provisions in the protocol as this revision process continues. (See related story in the November/December 1993 ASPP Newsletter, pages 7-8.)

Senate Science Subcommittee Hears of Strong Global Competition in Biotechnology

At the hearing of the Senate Commerce Subcommittee on Science, Technology and Space held March 23 on the competitiveness of the U.S. biotechnology industry, Senator Conrad Burns (R-MT) addressed the importance of biotechnology research in agriculture.

Burns said there are some instances where as much as \$1,500 is spent per acre to control weeds. He said farmers are "using less and less chemicals and they can't afford \$1,500 an acre" to control weeds. At the same time, there are efforts to reduce use of chemicals to control insects.

M.R.C. Greenwood, Associate Director for Science, Office of Science and Technology Policy, responded to Burns at the

hearing by pointing out that biotechnology research is addressing the needs for solutions to problems in agriculture and the environment. She also noted that the National Science and Technology Council is addressing the needs for science and technology to support food production.

Subcommittee Chairman Jay Rockefeller (D-WV) asked Dr. Greenwood to compare biotechnology in the U.S. with the rest of the globe. She said that U.S. biotechnology generally has an edge over, for example, Europe in areas such as drugs. However, she said that European countries are very strong in environmental remediation and agriculture. She said there are policies in place that aggressively encourage biotechnology in these coun-

tries. Greenwood said that in the U.S. the focus for biotechnology has been more in the area of health.

Greenwood told the Subcommittee that biotechnology represents a new "Industrial Revolution" in the magnitude of its importance. She said that if we had more scientific literacy, we would have more appreciation of the biotech industry.

Burns said he appreciated the work that had been done in Montana with biological controls. Barry Jacobsen of the college of Agriculture at Montana State University said that in the future, "biocontrols will be the rule rather than pesticides." He noted that the development of crops that are pest resistant also offers great hope for nations of the third world.



Senator Conrad Burns (R-MT), ranking minority member of the Senate Commerce Subcommittee on Science, Technology and Space, who has expressed strong interest in agricultural biotechnology.

Jacobsen added that "agriculture is the renewable industry." In addressing the global state of competition in biotechnology, Jacobsen cited advances in, for example, Taiwan and particularly Europe where they have "nearly caught up" with the United States in biocontrols. Lisa Conte of Shaman Pharmaceuticals, Inc., told the Subcommittee that in addition to its own research, Japan is very effective in purchasing rights to developments discovered through biotechnology outside Japan.

ASPP staff met on April 5 with Bryce Dustman of Sen. Burns's staff concerning issues discussed at the hearing. Dustman noted Sen. Burns's strong interest in agricultural biotechnology and that Burns, ranking minority member of the Subcommittee, had requested the hearing.

ASPP JOINS CNSF STEERING COMMITTEE

The American Society of Plant Physiologists was recently invited to join the steering committee of the Coalition for National Science Funding (CNSF). As a member of the approximately 20-member steering committee, ASPP will be able to play a more active role in the 125-member coalition's activities in support of funding for the National Science Foundation (NSF). ASPP first joined CNSF in November 1993.

Participating organizations in CNSF include professional, scientific, and engi-

neering societies, higher education associations, institutions of higher learning, independent research institutions, and other organizations. CNSF supports a federal policy goal of substantial increases in the national investment in NSF's research and education programs in response to the scientific, technological and economic challenges facing the United States. Among its activities, CNSF publishes a newsletter that cites the importance of NSF-funded research and is circulated to Congressional offices, and it holds a number of meetings with key officials in Congress and the administration.

ASPP Headquarters Telephone Extension Directory

For your convenience, keep this listing of extension numbers handy when you call ASPP headquarters so that you can ask for the person best able to assist you. Ask our receptionist for the following individuals or extension numbers

If your subject is,	call	at ext. #
• Missing publications	Sharon Kelly	29
• Subscriptions, individual	Sharon Kelly	29
• Subscriptions, institutional	Dottie Ruyak, Waverly, Inc.	410-528-4011
• <i>Plant Physiology</i>		
Disposition of a manuscript	Annette Kessler	20
All other questions (except missing issues)	Deborah Weiner	18
• THE PLANT CELL		
Disposition of a manuscript	Annette Kessler	20
All other questions (except missing issues)	Judith Grollman	19
• Newsletter	Jody Carlson	17
• Advertising		
<i>Plant Physiology</i>	Deborah Weiner	18
THE PLANT CELL	Judith Grollman	19
Newsletter	Jody Carlson	17
• Address changes	Sharon Kelly	29
• Membership applications	Sharon Kelly	29
• Membership problems	Sharon Kelly	29
• Accounts payable	Thomas Dushney	10
• Accounts receivable	Estella Coley	22
• Accounts payable/receivable problems	Susan Chambers	11
• Annual meeting	Susan Chambers	11
• Public affairs/government relations	Brian Hyps	14
• Education	Brian Hyps	14
• Society governance	Ken Beam	15
• International issues	Ken Beam	15
• Awards	Ken Beam	15

Deadline for copy for the July/August 1994 issue of the ASPP Newsletter is June 15, 1994.

PLANT SIGNALS IN INTERACTIONS WITH OTHER ORGANISMS

Edited by
Jack C. Schultz and Ilya Raskin

Proceedings of the Eighth Annual Penn State Symposium in Plant Physiology
May 20-22, 1993

Current Topics in Plant Physiology: An American Society of Plant Physiologists Series
Volume 11

CONTENTS

- The Plasma Membrane Proton Pump (H⁺-ATPase) of Higher Plants, *M. Sussman*
- Heterotrimeric Guanine Nucleotide-Binding Proteins and Light Responses in Higher Plants, *E. Lam*
- Jasmonic Acid Signaling in Plants, *P. Staswick*
- Oligosaccharide Elicitors: Structures and Signal Transduction, *M. G. Hahn, J.-J. Cheong, R. Alba, F. Côté*
- Signaling Germination in *Striga asiatica*, *D. G. Lynn, L. S. Boone*
- Salicylic Acid and Systemic Acquired Resistance in Cucumber and Potato, *P. Meuwly, L. Sticher, W. Molders, K. Summermatter, J.-L. Coquoz, A. Buchala, J.-P. Métraux*
- Phenolic Acids and the Biosynthesis of Defense-Related Compounds, *J. León, M. Lawton, I. Raskin*
- Viral Movement Proteins and Macromolecular Trafficking through Plasmodesmata, *W. J. Lucas*
- Signaling in Plant Responses to Herbivory, *J. C. Schultz*
- Electrical Signaling in Plants, *J. F. Thain, D. C. Wildon*
- The Interaction between the Fungal Pathogen *Cochliobolus carbonum* and Maize, *J. D. Walton*
- Signal Transduction in Systemic Acquired Resistance, *K. Lawton, B. Vernooij, L. Friedrich, T. Gaffney, D. Alexander, D. Negrone, J.-P. Métraux, H. Kessmann, M. Gut Rella, S. Uknes, E. Ward, J. Ryals*
- Wound-Induced Defense Gene Activation in Poplar Trees, *H. R. G. Clarke, J. M. Davis, K.-H. Han, J. B. Hollick, S. Wilbert, M. P. Gordon*
- Signals in Plant Vesicular-Arbuscular Mycorrhizal Fungal Symbiosis, *Y. Kapulnik, H. Volpin, W. Palinski*
- Signaling in Interactions between Plants and Bacteria, *K. Goethals, P. Mergaert, D. Geelen, Jan Desomer, M. Van Montagu, M. Holsters*
- Nodulin Genes as Molecular Markers to Study *Rhizobium* Nod Factor Activity, *H. J. Franssen, R. Heidstra, R. Geurts, B. Horvath, M. Moerman, W. C. Yang, I. Vijn, T. Bisseling*
- Ethylene and Interorgan Signaling in Flowers following Pollination, *P. B. Larsen, E. J. Woltering, W. R. Woodson*
- Herbivore-Induced Plant Volatiles Mediate Plant-Carnivore, Plant-Herbivore, and Plant-Plant Interactions: Talking Plants Revisited, *M. Dicke, J. Bruin, M. W. Sabelis*
- Self-Incompatibility: A Self/NonselF Recognition Mechanism of Sexual Reproduction, *T-h. Kao*
- and 21 MINI PAPERS

Plant Signals in Interactions with Other Organisms

I enclose a check for U.S. currency, drawn on a U.S. bank, and made out to ASPP.

I authorize this charge to my account:
 Visa MasterCard Diner's Club

Credit card number (in blocks):

Expiration date (in blocks): /

Signature: _____

Name: _____ Phone: _____ Member ID number _____

Address: _____

Book No. 30034	Copy price	No. of copies	Amount
Member	\$15		
Nonmember	\$25		
Expedited Mail (add \$15)			TOTAL
!!! MAIL THIS FORM TO !!!			
American Society of Plant Physiologists			
PO Box 64209			
Baltimore, MD 21264-4209 USA			

Gatherings

All announcements are subject to editing. Wherever possible, submit announcements via e-mail to jcarlson@accesa.digex.net. Alternatively, mail submissions to Jody Carlson, *ASPP Newsletter*, 15501 Monoma Drive, Rockville, MD 20855-2768. Because announcements are scanned into the computer, **faxed transmissions will not be accepted.**

FUTURE ASPP ANNUAL MEETING SITES

1994—Portland, Oregon
Saturday, July 30 through
Wednesday, August 3

1995—Charlotte, North Carolina
Saturday, July 29 through
Wednesday, August 2

1996—San Antonio, Texas
Saturday, July 27 through
Wednesday, July 31

JUNE

June 4-7
1994 Congress on
Cell and Tissue Culture
Regulation of Cell and
Tissue Differentiation
Research Triangle Park, North Carolina
Sessions specifically relating to plant science
include: The state of the art for transformation
systems: what is new, what works best,
what are the current limitations, pros and
cons; In vitro plant resources for valuable
products; Morphogenesis: differentiation of
plant cells and tissues; Morphogenesis:
hormonal manipulation of differentiation;
Safety of genetically engineered plants—
science and perceptions. Two plant-related
workshops also are planned: New advances
in automation for micropropagation; Corn
transformation. For more information,
contact: Marietta W. Ellis, Tissue Culture
Association, 8815 Centre Park Drive, Suite
210, Columbia, MD 21045; telephone 410-992-
0946, fax 410-992-0949.

June 12-17
VIII International Congress on
Plant Tissue and Cell Culture
Florence, Italy
Contact: 8th IAPTC Congress, Secretariat,
c/o Oliva Scaramuzzi, Viale g. Milton 81,
50129 Firenze, Italy; telephone 55-476377, fax
55-476393.

June 19-24
4th International Congress of
Plant Molecular Biology
Amsterdam, The Netherlands
The congress will take place in the RAI
International Exhibition and Congress
Centre, Amsterdam, The Netherlands.
Plenary speakers: E. Magnien, M. Bevan, Y.
Minobe, P. Quail, J. Ecker, L. Willmitzer, C.
Somerville, A. Clarke, F. Ausubel, P. de Wit,
J. Dénarié, E. Meyerowitz, J. Mol, J. Schell.
Symposium session titles: Plant genomes;
Regulation of gene expression; Epigenetics;
Plant development; Signal Transduction in
plants; Light responses; Proteins; Regulation
of metabolism; Plant-microbe interactions;
Plant biotechnology; Technique development;
Applications, public acceptance, environ-
ment, regulation and developing countries.
Chair of the local organizing committee is
Robbert Schilperoort. Contact: Congress
Secretariat, 4th International Congress of
Plant Molecular Biology, c/o RAI OBA,
P.O. Box 77777, 1070 MS Amsterdam, The
Netherlands; telephone 31 20 549 1212; fax
31 20 646 4469, telex 13499 raico nl.

June 25-28
Second International
Weed Control Congress
Copenhagen, Denmark
This meeting is co-sponsored by the
International Weed Science Society and the
European Weed Research Society. For details
write to ICS, International Conference
Services A/S, Strandvejen 171, P. O. Box 41,
DK-2900, Hellerup, Denmark.

June 26-July 1
IIIth International Meeting on Plant Lipids
Paris, France
This meeting will be co-chaired by J.-C.
Kader and P. Mazliak. It will be devoted to
all aspects of structure, physiological role,
and gene technology of plant lipids. Sessions
will include: fatty acid biosynthesis;
membranes: structure and lipid organization
in chloroplasts and other membranes, polar
lipid metabolism, lipid transfer; lipid
peroxidation; oil seed metabolism and
development; isoprenoids; plant lipids and
environment (secondary messengers, defense
reactions, herbicides); lipid biotechnology
and genetic engineering. Contact: J.-C.
Kader, Plant Cell and Molecular Physiology
Group, Université Paris 6, Tour 53, Case 154,
4 place Jussieu, 75005 Paris, France; fax 33-1-
44-27-61-51.

June 26-July 1
Seventh International Symposium
Molecular Plant-Microbe Interactions
Edinburgh, Scotland
Contact: M. J. Daniels, The Sainsbury
Laboratory, John Innes Centre, Colney Lane,
Norwich NR4 7UH, U.K.; telephone (44) 603
52571, fax (44) 603 250024.

June 28-29
International Symposium on
Table Grape Production
Anaheim Convention Center
Anaheim, California
The American Society for Enology and
Viticulture is sponsoring an International
Symposium on Table Grape Production in
conjunction with its 45th annual meeting in
Anaheim, California, June 26-29. The
purpose of this symposium is to bring
together scientists, growers, and other parties
interested in table grape production and
research to discuss recent advances in the
culture, physiology, pest management,
genetics, and postharvest storage of table
grapes. Invited speakers will present keynote
lectures on production practices and current
research in the world's leading table grape
producing regions. Research scientists
working on topics related to table grape
production are encouraged to submit
abstracts for presentation at the symposium.
A two day pre-symposium tour of table
grape production and storage facilities in the
San Joaquin and Coachella Valleys of
California is planned. For information
contact Nick K. Dokoozlian, University of
California, Kearney Agricultural Center, 9240
S. Riverbend, Parlier, CA 93648; telephone
209-891-2500, fax 209-891-2593.

JULY

July 4-21
Arabidopsis Molecular Genetics
Cold Spring Harbor Laboratory
Cold Spring Harbor, New York
This course provides an intensive overview
of current topics and techniques in
Arabidopsis biology, with an emphasis on
molecular genetics. It also introduces
approaches used in yeast that have the
potential to be utilized for the advancement
of *Arabidopsis* molecular genetics. It is
designed for scientists with experience in
molecular techniques who are working or
wish to work with *Arabidopsis*. Speakers will
provide both an in-depth discussion of their

work and an overview of their specialty. Speakers include: F. Ausubel, T. Cashmore, J. Chory, G. Coruzzi, N. Crawford, G. Drews, J. Ecker, P. Green, G. Fink, D. Marks, D. Meinke, J. Nasrallah, N. Olzewski, D. Preuss, I. Sussex, A. Telfer, A. Theologis, R. Vierstra, D. Weigel, and P. Zambryski. The laboratory sessions will cover: *Arabidopsis* genetics and development; transient gene expression assays in protoplasts; complementation of yeast mutants for cloning *Arabidopsis* genes; two hybrid system in yeast; transformation by *Agrobacterium*; in situ detection of RNA; protein import into chloroplasts; biochemical analysis of transcription factors; pulsed-field gel electrophoresis and analysis of yeast artificial chromosomes containing the *Arabidopsis* genome. Joanne Chory, Salk Institute; Joseph Ecker, University of Pennsylvania; Athanasios Theologis, University of California, Berkeley. For more information, contact Cold Spring Harbor Laboratory, 1 Bungtown Road, Cold Spring Harbor, NY 11724-2213; telephone 516-367-8345, fax 516-367-8845, e-mail meetings@cshl.org.

July 10-15

Gordon Conference

Postharvest Physiology

Plimouth, New Hampshire

Organizers: J. D. Anderson and D. Grierson. Sessions and speakers: Molecular Biology of Fruit Ripening—A. Bennett (discussion leader), D. Grierson, H. Klee, J. Beckman, J. Giovannoni, D. Brummell; Biology of Flower Senescence—W. R. Woodson (discussion leader), M. Reid, K. Evensen, T. Stead; Texture Changes and Softening—D. Huber (discussion leader), R. Jackman, K. Gross, R. Redgwell; Protection during Postharvest Handling and Storage—M. Knee (discussion leader), A. Kanellis, A. Cameron, N. Banks, J. Rosen; Ethylene Biosynthesis and Action—A. Mattoo (discussion leader), H. Imaseki, J.-C. Pech, D. R. Dilley, A. Bleecker, M. Rothenberg; Stress Responses of Fruits and Vegetables—R. Shewfeld (discussion leader), M. Cantwell, S. Lurie, G. King; Controlling Postharvest Diseases—E. Chalutz (discussion leader), D. Prusky, A. El Ghaouth, A. G. Bennett; Applications and Needs of Postharvest Physiology in the Tropics—R. Paul (discussion leader), J. Siriphanich, C. A. Campbell; Future Challenges in Postharvest—A. Watada (discussion leader), E. J. Mitcham, J. K. Fellman, B. L. Upchurch. Contact Dr. Carlyle B. Storm, Director, University of Rhode Island, P.O. Box 984, West Kingston, RI 02892-0984; telephone 401-783-4011, fax 401-783-7644.

July 13-14

Biochemical Society Meeting

Transgenic Plants and Biochemistry Lancaster University, U.K.

The two day meeting will concentrate on the use of transgenic plants to study biochemical processes in higher plants. Speakers and

topics will include: W. P. Quick, N. J. Kruger, C. H. Foyer, S. Temple, G. Galili, D. J. Murphy, P. M. Mullineaux, H. Rennenberg, G. Whitlam, A. Gatehouse, J. E. Taylor, N. G. Halford. Proceedings of the meeting will be published in the *Biochemical Society Transactions*. Poster presentations are welcome. For further information contact: Professor P.J. Lea, Division of Biological Sciences, Lancaster University, LA1 4YQ, U.K.; fax 44-524-382212; e-mail bsa045@cent1.lancs.ac.uk.

July 17-22

Gordon Research Conference

Gravitational Effects on Living Systems

New London, New Hampshire

Meeting organizers are S. J. Roux, chair, and M. J. Correia, vice-chair. Sessions and speakers: Mechanisms of sensing and responding to gravity—P. Todd, A. Sievers (discussion leaders), O. Hamill, C. Otey, M. Staves, K. Hasenstein; Amplification and transduction of the gravity signal—B. Pickard, P. Wangemann (discussion leaders), S. Assmann, N. Read, D. Corey; Cellular-molecular responses to simulated or actual reduced gravity—F. Booth, M. Tischler (discussion leaders), D. Thomason, S. Kandarian, R. Turner, K. Esser; Analysis of gravity responses at level of single cells—R. M. Brown Jr., A. Cogoli (discussion leaders), F. Sack, R. Baird, S. Doty; Integration of gravity signal at multicellular level—L. Feldman, P. Masson (discussion leaders), D. Cosgrove, R. Hangarter, D. Angelaki; Evolution/comparative physiology of gravity-sensing systems—U. Budelmann, P. Kaufman (discussion leaders), A. Popper, K. Niklas; Physiological/morphological effects of altered gravity—C. Mitchell, J. Sonnenfeld (discussion leaders), T. Baskin, N. Lewis, M. Ross, K. Chapes; Microgravity research opportunities—D. Gaffney, W. Wiesmann (discussion leaders), L. Young, M. Hughes-Fulford; New frontiers/challenges in gravitational biology research—E. Morey-Holton, K. Poff (discussion leaders), M. Correia, S. Roux. Contact: Dr. Carlyle B. Storm, Director, Gordon Research Conferences, University of Rhode Island, P.O. Box 984, West Kingston, RI 02892-0984; telephone 401-783-4011; fax 401-783-7644.

July 17-21

5th International Symposium Genetics and Molecular Biology of Plant Nutrition

University of California, Davis
The symposium will offer summary papers, reports, and posters dealing with genetic and molecular biological aspects of the following and related topics: nutrient acquisition, plant nutrient requirements and responses, functional aspects and efficiency of nutrient use, mineral composition, and tolerance of toxic ions and salts. Papers dealing with all species of crops will be welcome, as well as papers on wild species. Please refer inquiries

to D. W. Rains, Department of Agronomy & Range Science, University of California, Davis, CA 95616; telephone 916-752-1711, fax 916-752-4361.

July 21-22

The Eleventh Annual Meeting

Mid-Atlantic Plant Molecular

Biology Society

Beltsville, Maryland

The MAPMBS was founded in 1984 as a means to ensure scientists in the region of a high-quality, accessible, and affordable plant molecular biology meeting each year. The society particularly wishes to encourage graduate student and postdoctoral participation in presenting oral reports and posters and in contributing to discussions. The meeting schedule includes two full days of twenty to thirty minute talks, and posters will be displayed both days. The keynote address will be presented by Anthony Cashmore. The sessions and invited speakers include: gene regulation—Andrew Dancis, Lynn Zimmerman; plant/microbe interaction—Ralph Dean, Rosemarie Hammond; transformation—Kathy Kamo, Jeffrey Townsend. For further information contact: Benjamin Matthews, USDA/ARS, PMBL, BARC-West, Bldg. 006, Beltsville, MD 20705; telephone 301-504-5730, fax 301-504-5320, or Frank Turano, USDA/ARS, CSL, BARC-West, Bldg. 046A, Beltsville, MD 20705; telephone 301-504-6145, fax 301-504-7521.

July 24-28

The Production of Recombinant

Proteins in Plants

Leicester, U.K.

Contact: Dr. O. Byron, University of Leicester, Department of Biochemistry, University Road, Leicester, Leicestershire LE1 7RH, UK.

July 24-29

Gordon Research Conference

Plant Molecular Biology

New Hampton, New Hampshire

Organizers are Vicki Chandler and Sakis Theologis. Speakers and topics: Transcriptional Control—I. A. Theologis (discussion leader), Z. Schwarz-Sommer, M. Sainz, E. Grotewold; II. William Thompson (discussion leader), P. Meyer, V. Chandler; Posttranscriptional Control: I. P. Green, M. Schuler, R. Meagher, J.-D. Rochaix; II. S. Wessler (discussion leader), A. Barkan, T. Hohn; Post-translational Control: G. Coruzzi (discussion leader), R. Zielinski, S. Scofield, R. Vierstra; Protein targeting: N. Raikhel (discussion leader), J. Denecke, K. Keegstra; Signaling, cell-cell communication: J. Chory (discussion leader), C. Chang, B. Staskawicz, T.-H. Kao; Developmental Regulation: R. Meeks-Wagner (discussion leader), K. Roberts, R. Schmidt, S. Dellaporta; Keynote speaker: J. Nasrallah, Cell-cell signaling in pollen-stigma interactions. Contact Dr. Carlyle B. Storm, Director, Gordon Research

Conferences, University of Rhode Island, P.O. Box 984, West Kingston, RI 02892-0984; telephone 401-783-4011; fax 401-783-7644.

July 30-August 3

1994 Annual Meeting

American Society of Plant Physiologists
Portland, Oregon

Contact: 1994 Annual Meeting, ASPP, 15501 Monona Drive, Rockville, MD 20855-2768; telephone 301-251-0560, fax 310-279-2996.

July 31-August 4

Natural Products Research Halifax, Nova Scotia

This will be a joint meeting of the Phytochemical Society of Europe, the American Society of Pharmacognosy, Gesellschaft für Arzneipflanzenforschung, and Association Française pour l'Enseignement et la Recherche en Pharmacognosie. Topics will include: aflatoxins—their biosynthesis, molecular recognition, and role in nature; the chemistry, biological activity, and significance of fumonisins and other mycotoxins; studies on marine toxins; the value-added role of toxin derivatives in medicine, mariculture, and public health; biologically active alkaloids from poison frogs; phorbol esters and their interactions with isotypes of protein kinase C; natural products with antineoplastic and immunomodulating activity; cytotoxic substances of marine origin; the emerging role of small cyclic peptides in cellular biology; hazards of natural products, polyether toxins; overview of snake venom chemistry. Contact: Professor R. F. Chandler, Director, College of Pharmacy, Dalhousie University, Halifax, Nova Scotia, Canada B3H 3J5; telephone 902-494-2097, fax 902-494-1396.

AUGUST

August 2-6

Structure, Function and Biogenesis of Chlorophyll-Protein Complexes University of California, Los Angeles

This meeting is being organized in honor of the retirement of Professor J. P. Thornber of the Department of Biology at UCLA. The purpose of the meeting is to bring together scientists with an interest in structural and functional problems related to chlorophyll-protein complexes. Recent developments in this field will be discussed and will serve as the basis for discussions of future directions for research. Invited speakers will present lectures on the following topics: Structure of the bacterial reaction center complex; Structure and function of antenna chlorophyll-protein complexes; Reaction center complexes in oxygenic organisms; Biosynthesis of chlorophyll-protein complexes; Structure of a light-harvesting chlorophyll-protein complex (LHCPII). For further information, please contact: Dr. Richard

Malkin, Department of Plant Biology, University of California, 111 Koshland Hall, Berkeley, CA 94720; telephone 510-642-5959, fax 510-642-4995, e-mail dickm@nature.berkeley.edu

August 3-6

Plant Growth Regulator Society of America Annual Meeting Portland, Oregon

This meeting will be held at the Red Lion Hotel, Lloyd Center, Portland, Oregon, overlapping the ASPP annual meeting. The meetings will feature symposia and research reports on a variety of topics related to plant growth regulation. One symposium will address Genetic and Molecular Approaches in Plant Growth Regulation and will feature presentations by A. Theologis, H. Klee, R. Bensen, and T. Bleeker (Gary Gardner, U of Minnesota, organizer). A second symposium will address Roots and Plant Growth Regulation and will feature talks by P. Read, J. Riov, B. Taylor, E. Klepper, and H. Flores (Tim Davis, Texas A&M, organizer). Original research reports, which will be published in the Society's proceedings, are invited in all areas of plant growth regulation. The Society will award prizes of \$300 and \$100 for the two best student papers. For further information, contact Dr. Tom Tworokski, Program Chair, USDA, ARS, Appalachian Fruit Research Station, Kearneysville, WV 25430, telephone 304-725-3451.

August 4-6

1st International Symposium on Plant Dormancy

Oregon State University, Corvallis
This interdisciplinary symposium will include keynote and invited speakers, contributed paper and poster sessions, extensive discussion periods, and topical workshops. It is strategically scheduled to bridge the gap between the ASPP meeting in Portland and that of the American Society for Horticultural Science in Corvallis. Session topics include: Approaches to Dormancy Research; Physiology, Biochemistry and Gene Expression Related to (1) Temperature, (2) Hydrational Status, and (3) Photoperiodism; and Agricultural and Biotechnological Manipulation. Workshop topics include: Seed Dormancy; Bud Dormancy; Physiological, Biochemical, and Molecular Aspects of Plant Dormancy; and Control in Agricultural Cropping Systems (including breeding). Attendance will be limited by application to a maximum of about 75 participants, with a proportion of applications available to advanced graduate students and postdoctoral researchers. For additional information and/or future announcements, contact: Dr. Gregory A. Lang, IAREC, Washington State University, Route 2, Box 2953A, Prosser, WA 99350-9587; telephone 509-786-2226, fax 509-786-4635.

August 6-10

American Phytopathological Society Annual Meeting

Albuquerque, New Mexico

Contact: Write to APS, 3340 Pilot Knob Road, St. Paul, MN 55121.

August 7-10

91st Annual Meeting

American Society of Horticultural Sciences
Oregon State University, Corvallis

The meeting will take place the week following the annual ASPP meeting in Portland. The program will feature colloquia, lectures, workshops, and approximately 1000 presentations on all aspects of horticulture. The 1st International Symposium on Plant Dormancy and 2nd International Plant Breeding Symposium will be held at OSU between the ASPP and ASHS meetings. For additional information please contact Dr. Charles Boyer, Ag and Life Sciences 4017, Oregon State University, Corvallis, OR 97331-7304, telephone 503-737-5475 or e-mail boyerc@bcc.orst.edu.

August 14-19

Gordon Conference

Salinity Tolerance in Plants Tilton, New Hampshire

Organizers: M. A. Bisson and F. DuPont. Sessions and speakers: Breeding, genetics, and whole plant aspects of salt tolerance—E. Epstein (discussion leader), J. Dvorak, T. J. Flowers, R. Munns; Metabolic responses to salinity—J. A. C. Smith (discussion leader), H. J. Bohner, M. Popp; Osmoprotectants—D. Rhodes (discussion leader), A. Hanson, W. Loescher, L. N. Csonka; Co-transport systems—F. M. DuPont (discussion leader), B. Barkla, L. Counillon; Channels—M. A. Bisson (discussion leader), E. Blumwald, S. Tyerman, C. Kung; ATPases—L. Taiz (discussion leader), L. Wimmers, M. Binzel; Salt-induced gene expression—R. Bressan (discussion leader), P. M. Hasegawa, J. Cushman, D. Ho; Cell walls and growth responses—J. Dainty (discussion leader), G. Cramer, A. D. Tomos; Hormones—H.-J. Bohner (discussion leader), M. Guiltinan, E. Bray. Contact Dr. Carlyle B. Storm, Director, Gordon Research Conferences, University of Rhode Island, P. O. Box 984, West Kingston, RI 02892-0984; telephone 401-783-4011, fax 401-783-7644.

August 16-19

Plant Biotechnology Methods Pennsylvania State University University Park, Pennsylvania

Contact: Biotechnology Institute, The Pennsylvania State University, 519 Wartik Lab, University Park, PA 16802-9959.

August 29-September 3

Environmental Constraints and Oaks: Ecological and Physiological Aspects
Nancy, France

This international symposium is sponsored by INRA, IUFRO, and EUROSILVA. The program will consist of six sessions, each containing invited lectures, voluntary communications, and posters. The sessions are: (1) water-stress-induced dysfunctions in oak tree physiology: effects of drought, waterlogging, and associated constraints; (2) interactions between environmental constraints and pathogenesis; (3) effects of climate change and elevated CO₂ on oak physiology and ecology; (4) ecology and growth of oak stands; (5) ecological and physiological analysis of oak decline; and (6) ecological diversity and population genetics of oak species. Those interested are invited to present research results related to one of the six sessions as oral communications or posters. The proceedings will be published in a special edition of *Annales des Sciences Forestières*. For further information, please contact the symposium secretariat: E. Dreyer or J. Bohin, U.R. Ecophysiologie Forestiere, INRA-Nancy, F 54280, Champenoux, France; telephone 33-83-39-40-41, fax 33-83-39-40-69, e-mail quercus@nancy.inra.fr or Richard E. Dickson, Forestry Sciences Laboratory, 5985 Highway K, P.O. Box 898, Rhinelander, WI 54501; telephone 715-362-7474, fax 715-362-7816.

SEPTEMBER

September 3-6

Interdisciplinary Congress on Plant Biomechanics
Montpellier, France

The Congress will emphasize the importance of interactions between biological, materials science and engineering aspects of plants, stressing also their relevance to agricultural, horticultural, silvicultural or industrial applications. The program will consist of submitted papers, lectures, and roundtable discussions on adaptive mechanical design of plants, biomechanics of growth, and short-term biomechanical responses. Sponsoring organization is the French Comité National de la Recherche Scientifique. The scientific committee includes R. R. Archer, P. Baas, J. Crabbe, P. Cruziat, A. R. Ennos, B. Gardiner, D. Guitard, F. Halle, M. Jaffe, G. Jeronimidis, K. Ruel, B. Monties, V. Mosbrugger, J. C. Roland, W. Silk, T. Speck, H-Ch. Spatz, B. Thibaut, J. Vincent. To obtain further details, contact Bernard Thibaut, LMGC "Bois," CP 81, U. Montpellier II, Place Eugene Bataillon, 34095 Montpellier Cedex, France; telephone 33 67.14.34.31, fax 33 67.54.48.52.

September 7-9

Manipulation of Photosynthetic Carbon Metabolism to Improve Crop Productivity
Rothamsted Experimental Station,
Harpenden, UK

This meeting is organized by Rothamsted and the Plant Metabolism Group of the Society of Experimental Biology to mark the retirement of Dr. Alfred Keys. Invited and contributing speakers will discuss recent advances in primary photosynthetic carbon metabolism and opportunities for engineering it to improve the efficiency of crop production. Sessions will include: photosynthetic efficiency in relation to crop productivity; alternative pathways for carbon fixation; constraints to Rubisco activity—identification and removal; genetic approaches to manipulating photosynthesis and environmental interactions. Further details are available from Dr. M. A. J. Parry, Rothamsted Experimental Station, Harpenden, Hertfordshire AL5 2JQ, UK; telephone 0582 763133, fax 0582 760981.

September 12-14

Protein Phosphorylation in Plants
Long Ashton Research Station
Bristol, United Kingdom

This meeting is sponsored by the Phytochemical Society of Europe, the Plant Metabolism Group of the Society for Experimental Biology, and the Industrial Biochemistry and Biotechnology Group of the Biochemical Society. Sessions will include: The role of protein phosphorylation in the regulation of plant metabolism; Cell cycle regulation; Molecular cloning of plant protein kinases; Protein phosphorylation in signal reception and transduction. Invited speakers include: G. Hardie, C. MacKintosh, H. Nimmo, P. Gadal, C. Foyer, S. Huber, D. Inze, D. Dudits, M. Kreis, N. Halford, B. Kohorn, A. Trewavas, G. Scherer, J. R. Ecker, J. Walker. For further details, please contact P. R. Shewry, N. G. Halford, or R. Hooley, Department of Agricultural Sciences, University of Bristol, AFRC Institute of Arable Crops Research, Long Ashton Research Station, Bristol, BS18 9AF; telephone 2-75-392181; fax: 2-75-394007.

September 13-17

8th European Bioenergetics Conference
Valencia, Spain

Contact: Eduardo Real, EBE 94, Centro de Investigaciones Biológicas, Velazquez 144, 28006 Madrid, Spain; fax 34-1-562-7518, e-mail ciber12@cc.csic.es.

OCTOBER

October 2-6

22nd Aharon Katzir-Katchalsky Conference
Plant Molecular Biology: Potential Impact on Agriculture and the Environment
Köln, Germany

Organizers: Jeff Schell, Ilan Chet, and Robert Fluhr. The Aharon Katzir-Katchalsky Conferences are a series of symposia on timely scientific topics. The aim of the 22nd conference is to present work in plant molecular biology that has potential agricultural and biotechnical applications. Sessions will include: Modulating Biochemical Pathways; Control of Growth; Ripening and Fertility; Natural and Engineered Resistance Genes; Environmental Interactions; Recognition and Biological Control; Signal Reception and Transduction. Contact: Secretariat 22nd AKK Conference, Aharon Katzir-Katchalsky Center, Weizmann Institute of Science, Rehovot 76100, Israel; telephone 972-8-342148, fax 972-8-474425.

October 2-6

Second International Symposium on the Applications of Biotechnology to Tree Culture, Protection, and Utilization
Minneapolis, Minnesota

This meeting is being held in conjunction with the TAPPI R&D Division Biological Sciences Symposium. Preliminary topics: commercialization of tree biotechnology; tissue culture; tree genetics, physiology and stress; tree protection (insects/diseases). Concurrent sessions with TAPPI: bioprocessing/biopulping/bioremediation; gene mapping/molecular biology. Contributed sessions and poster presentations. For further information, please contact: Edith Franson, Executive Secretary, Tree Biotechnology Symposium, Forestry Sciences Laboratory, P.O. Box 898, Rhinelander, WI 54501; telephone 715-362-7474, fax 715-362-7816.

NOVEMBER

November 1-4

Cucurbitaceae 94: Evaluation and Enhancement of Cucurbit Germplasm
South Padre Island, Texas

The Texas Agricultural Experiment Station, Texas Agricultural Extension Service, and USDA/ARS Subtropical Research Laboratory will host Cucurbitaceae 94 at the Radisson Resort, South Padre Island, Texas. The purpose of this meeting is to provide a forum for the presentation of current scientific information about germplasm evaluation and research activities in cucurbit crops. The scientific program will consist of posters, invited talks, and panel discussions on diseases, host-pathogen interactions, and genetics related to the enhancement of cucurbit germplasm. Molecular and genetic aspects of diseases, germplasm resources,

breeding strategies, and the physiology of fruit quality are a few of the topics that will be covered in the 1994 meeting. To receive additional information on program content and registration material, contact Dr. James R. Dunlap, Texas Agricultural Experiment Station, 2415 East Highway 83, Weslaco TX 78596; telephone 210-968-5585; fax 210-968-0641, e-mail j-dunlap@tamu.edu.

November 13-16

Third International Symposium
Biosafety Results of Field Tests of
Genetically Modified
Plants and Microorganisms
Monte Rey, California

Contact: Alvin Young, USDA, Office of
Agricultural Biotechnology, telephone 703-
235-4419, fax 703-235-4429.

1995

JANUARY

January 7-13

Keystone Symposium
Plant Cell Biology: Mechanisms, Molecular
Machinery, Signals and Pathways
Taos, New Mexico

Organizers of this meeting are Natasha Raikhel and Christopher Lamb. Recent exciting advances are starting to reveal the molecular mechanisms underlying the functional properties of plant cells. Patch clamp studies have uncovered novel channels involved in cellular signaling; the machinery involved in targeting of proteins to specific cellular locations is emerging, and the role of genetical inter-organellar communication is emerging. Topics for plenary sessions, workshops, and poster sessions include: protein sorting, channels and pumps, the cytoskeletal system, cell-cell communication, intra-cellular signaling, cytoplasmic regulatory mechanisms, the cell surface and extracellular matrix, and plant cell division. Past applicants and attendees of Keystone Symposia will automatically receive application information. All others should write to Keystone Symposia, Drawer 1630, Silverthorne, CO 80498; telephone 303-262-1230.

January 15-19

Plant Genome III
San Diego, California

The International Plant Genome Conference will be sponsored by the USDA/ARS and National Agricultural Library, the John Innes Centre (UK), the Rockefeller Foundation, and the International Society for Plant Molecular Biology. Session topics are: chromosome structure, isolation and transformation of agriculturally important genes, instrumentation/technology, comparative genetic mapping, QTLs/metabolic pathways. Co-chairs are S. Heller, J. Miksche, M. Gale, S.

McCouch. For registration materials, poster abstract application, and exhibit information, contact: Plant Genome III, c/o Scherago International, Inc., 11 Penn Plaza, New York, NY 10001; telephone 212-643-1750, fax 212-643-1758, e-mail scherago@biotech.net.com.

January 29-February 3, 1995
Gordon Research Conference
Temperature Stresses in Plants
Oxnard, California

Meeting organizers: Michael Thomashow, chair; Don Ort, vice-chair. Topics will include: whole plant responses to temperature stress; effects of temperature on photosynthesis; mechanisms of sensing temperature; temperature stress proteins; links between temperature and drought stress; breeding for temperature stress tolerance; role of membranes in temperature stress tolerance; life at extreme temperatures. Contact: Dr. Carlyle B. Storm, Director, Gordon Research Conferences, University of Rhode Island, P.O. Box 984, West Kingston, RI 02892-0984; telephone 401-783-4011, fax 401-783-7644.

MARCH

March 26-April 1, 1995

Keystone Symposia, Concurrent Meetings
• Frontiers of Plant Morphogenesis
• Signal Transduction in Plants
Hilton Head Island, South Carolina

Organizers of Frontiers of Plant Morphogenesis are Richard J. Cyr and Barry A. Palevitz. Organizers of Signal Transduction in Plants are Daniel F. Klessig and Winslow Briggs. The purpose of the morphogenesis meeting is to provide a common forum for workers in the fields of cell biology, molecular genetics, and signal transduction to come together and discuss key issues in morphogenesis. These issues concern the broad area of the interface between the cytoskeleton, cell wall, and plasma membrane in morphogenesis, and how new insights can be synthesized using molecular, cellular, and biochemical approaches. The goal of the signal transduction meeting is to bring together workers in the many areas of plant biology that touch upon signal transduction to facilitate the exchange of ideas, results, and approaches. Most major questions concerning signal transduction in plants remain unanswered, but several recent developments have strongly impacted research on signal transduction in plants: the dramatic explosion of our knowledge of the molecular, cellular, and developmental biology of plants; genetic approaches to signal transduction using model systems; use of PCR to clone plant homologues of components of signal transduction systems in microbes and animals, and purification and cloning of the first putative plant receptors. Past applicants and attendees of Keystone Symposia will automatically

receive application information. All others should write to Keystone Symposia, Drawer 1630, Silverthorne, CO 80498; telephone 303-262-1230.

APRIL

April 3-6, 1995

International Symposium on Weed and
Crop Resistance to Herbicides
University of Cordoba, Spain

This symposium will be jointly sponsored by the European Weed Research Society and the Spanish Weed Science Society. Research on herbicide resistance mechanisms in plants is one of the most important aspects within the crop and weed-herbicide area. Identification and characterization of resistant biotypes as well as the study of their resistance mechanisms can help us to develop new strategies for weed control and to improve agricultural productivity while protecting our environment and conserving our natural resources. Important efforts are especially being directed toward the design of biopesticides and developing herbicide-tolerant crops through genetic engineering techniques. General topics: herbicide target sites and resistance mechanisms associated with them; resistance mechanisms associated with herbicide metabolism and detoxification; other resistance mechanisms; biotechnological approaches to develop herbicide resistance in crops—problems and possibilities; integrated mechanical, chemical, and biological methods for weed control—managing or avoiding resistance. Deadline for abstracts: January 30, 1995. For further information or to receive a copy of the first circular, contact Dr. J. Jorin, Departamento de Bioquímica y Biología Molecular, University of Cordoba, Apartado 3048, Cordoba, Spain; telephone 57-218439, fax 57-218563.

April 1995

Mass Spectrometry
Swansea, United Kingdom

This meeting is sponsored by the Phytochemical Society of Europe. Contact address: Dr. C. J. Smith, Department of Biochemistry, University College of Swansea, Singleton Park, Swansea SA2 8PP, UK.; telephone ++44-(0)792-295378, fax ++44-(0)792-295447.

MAY

May 8-13, 1995

First International Symposium of
Sucrose Metabolism
Mar del Plata, Argentina

This meeting will commemorate the 40th anniversary of the discovery of the two sucrose metabolizing enzymes and honor the memory of their discoverers, Drs. Luis Leloir and Carlos Cardini. The aim of the meeting

is to present a comprehensive and integrated view of sucrose metabolism under the following main topics: sucrose biosynthesis and its regulation; sucrose cleavage and its regulation; molecular biology of sucrose metabolizing enzymes; sucrose conversion to starch; sucrose conversion to fructans and raffinose-based polymers; sucrose transport (long distance and intracellular) and the role of sucrose in plant stress. The symposium will consist of six to eight sessions of four to five speakers each with discussion session and evening poster presentations. Those interested in receiving additional information in the future please contact: Dr. Horacio Pontis or Dr. Graciela Salerno, Fundacion para Investigaciones Biologicas Aplicadas, Casilla de Correos 1348, 7600 Mar del Plata, Argentina, telephone 54-23-74-8257, fax 54-23-74-3357; or Dr. Ed Echeverria, Citrus Research and Education Center, 700 Experiment Station Road, Lake Alfred, FL 33850, USA, telephone 813-956-1151, fax 813-956-4631.

JUNE

June 26-30, 1995

International Workshop Peroxidase Biotechnology and Application Puschino (Moscow Region), Russia

The scientific program of this workshop will include these topics: novel peroxidase sources; gene cloning, expression, and protein engineering; peroxidase substrate specificity, stability, mechanism of action and inactivation; peroxidase in analysis, biosensors, environmental control; peroxidase in industry, production of drugs, phenolic resins, lignin biodegradation. To receive the second circular, a program, and registration forms, contact Dr. I. G. Gazaryan, Division of Chemical Enzymology, Department of Chemistry, Moscow State University, 119899 GSP Moscow, Russia; fax 7-95-939-27-42.

JULY

July 2-7, 1995

7th International Symposium on Preharvest Sprouting in Cereals Abashiri, Hokkaido, Japan

Specific topics will include: Physiology and molecular biology of grain development and germination; influence of environmental, physical and agronomic factors on sprouting; genetics and plant breeding; effects of sprouting damage on cereal end products. To receive a first announcement contact: Secretariat, 7th International Symposium on Preharvest Sprouting in Cereals, Kitami Agricultural Experiment Station, Kunneppu, Hokkaido 099-14, Japan; telephone 0157-47-

21 46, fax 0157-47-2774 or M. K. Walker-Simmons, USDA-ARS, 209 Johnson Hall, Washington State University, Pullman, WA 99164-6420; telephone 509-335-8696, fax 509-335-8674, e-mail simmons@wsuvm1.edu.

July 4-7, 1995

9th International Rapeseed Congress Cambridge, England

Since the last Congress in Saskatoon in 1991, interest in rapeseed has been aroused by awareness of the superior nutritional advantages of rape oil. There is also growing recognition of outlets for industrial purposes, for which the perceived benign effect on the environment is an added attraction. It is intended that the congress should cover these and other aspects of rapeseed production and utilization. Cambridge is in a major rapeseed growing area and has a distinguished background in agricultural research. The first announcement and call for papers is currently being distributed. Copies are available from the secretary: Denis Kimber, 44 Church Street, Haslingfield, Cambridge, CB3 7JE, England.

July 9-15, 1995

European Symposium on Photomorphogenesis in Plants Sítges, Barcelona, Spain

Specific topics will include: Blue-UV light photoreception, phytochrome properties and phytochrome genes, photoregulation of gene expression, signal transduction in photomorphogenesis, photocontrol of plant growth, photomorphogenesis in lower plants, photomorphogenesis in natural conditions. Second announcement containing the final program and all details of registration and accommodation will be mailed in November 1994. Contact address: Dr. Carmen Bergareche, Departament de Biologia Vegetal, Facultat de Biologia, Diagonal 645, 08028 Barcelona, Spain; fax 34-3- 4112842, telephone 34-3-4021464.

AUGUST

August 6-11, 1995

10th International Workshop on Plant Membrane Biology Regensburg, Germany

Meeting is intended to cover the following topics: pumps, carriers, channels, long distance transport processes, and transduction of chemical and electrical signals. Second announcement containing the final program and all details on registration and accommodation will be mailed in October 1994. To obtain the second announcement, contact Widmar Tanner or Norbert Sauer, Lehrstuhl für Zellbiologie und Pflanzenphysiologie, Universität Regensburg, Universitätsstrasse 31, 93053 Regensburg, Germany; fax 49-941-943-3352.

August 15-17, 1995

Phytochemical Society of North America Annual Meeting Sault Ste. Marie, Ontario, Canada

The meeting will feature a symposium entitled Phytochemical Redundancy in Ecological Interactions. The theme of the symposium will stress the diversity, overlap, and variety of plant chemical defenses against biological stresses including insects, fungi, and large herbivores. Speakers for the symposium are being solicited from persons active in the area. Interested potential speakers or persons with suggestions for speakers should contact either program co-chairperson for additional information: Dr. James A. Saunders, Plant Sciences Institute, USDA, Bldg. 9, Rm 5, Beltsville, MD 20705, telephone 301 504-7477, fax 301 504-6478; Dr. Pedro Barbosa, Department of Entomology, University of Maryland, College Park, MD 20742, telephone 301 405-3946 office, fax 301 314-9290.

August 20-25, 1995

10th International Photosynthesis Congress Montpellier, France

Topics: molecular organization of the photosynthetic apparatus; photophysical and photochemical processes; mechanisms of energy conservation; regulation of carbon metabolism and related enzymes; assimilation of nitrogen, sulfur, and other elements; structure of membranes, organelles, cells, and tissues; genes and regulation of their expression; development of the photosynthetic apparatus; photosynthesis and evolution; stress and adaptation; photosynthesis in global environment; photosynthesis in agricultural production and forestry; design and action of herbicides; chemical models and artificial photosynthesis; biotechnology; photosynthesis and renewable energy resources. A limited number of fellowships may be granted to some students and scientists encountering financial difficulties. For further information, contact: Dr. Paul Mathis (Photosynthesis Congress), DBCM-SBE, CEA Saclay, Bâtiment 532, 91191 Gif-sur-Yvette CEDEX, France; fax 33-1-69-08-87017.

* * *

1995

Annual Meeting

of the

American Society of
Plant Physiologists

Charlotte,
North Carolina

Saturday, July 29-
Wednesday, August 2

* * *