



ASPP NEWS

The Newsletter of the American Society of Plant Physiologists

Inside This Issue. . . .

4
President's Letter

5
Turning Point by Melvin Calvin

7-10
Public Affairs
• Agriculture Testimony
• DOE Testimony
• Status of NSF Funding
• ACI in Conference
• Ad Supports USDA Research

11
Education Forum

12
Obituaries

13
Letter from Hiroh Shibaoka

14
Affirmative Action/Copying
Policy Liberalized

15
Section News/People

16
World Wide Web Site Announced/
Jobs Go On Line

18
Staff Changes

21
Gatherings

27
Jobs

Deadline for the
May/June 1996 issue
of ASPP NEWS
is April 26, 1996.

Plant Biology '96: San Antonio Beckons All

ASPP Annual Meeting Reaches Out to All Plant Biologists

A bright horizon is in view for our ASPP annual meetings in 1996 and into the future. The Program Committee's name for the 1996 annual meeting symbolizes breadth and inclusiveness: Plant Biology '96. We recognize that many plant biologists look to ASPP as a place to publish, to advance their science, to learn, and to share ideas. We want the name of the meeting to make an inclusive statement and thereby attract an even greater number of our colleagues to join us.

Serving the Diverse Populations of Plant Biologists

What is a plant physiologist? No one description would fit all who attend our ASPP annual meetings. As we gather once

a year, each of us looks for a different blend of information for intellectual sustenance. Truly, we are all excited by the questions of how plants work, just as Stephen Hales was. However, the techniques we use, the model systems we choose, the stages of development of our scientific knowledge and experience, the endeavors to which we dedicate our scientific lives, and our institutions all function to diversify us.

Our annual meetings are designed to serve the needs of the diverse populations of plant biologists in many ways. The central, time-honored scientific program of our meeting is increasingly supple-

continued on page 3

Be There! Be Where?

Plant Biology '96

The Annual Meeting of the
American Society of Plant
Physiologists

Saturday, July 27, through
Wednesday, July 31

San Antonio Convention Center
San Antonio, Texas

Photograph courtesy of the San Antonio Convention & Visitors' Bureau

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continued from page 1

mented by inclusion workshops and focused gatherings to address the diverse needs of our attendees.

Workshops are developed each year to target specific needs in critical areas. Pre-meeting workshops provide opportunities for hands-on learning research techniques (e.g., the tissue printing workshop to be held this year). At Plant Biology '96 you will also see booths in the poster area with displays and demonstrations of advanced and/or updated techniques (e.g., Arabidopsis transformation). The Education Committee is continuing ASPP's commitment to outreach through a pre-meeting workshop for San Antonio area high school teachers. At a workshop on Saturday afternoon, the Committee on Public Affairs will discuss the "how to" of increasing public awareness of the significance of plant biology research. Two engaging evening workshops are planned as well: on Sunday there will be a discussion on ethics in publishing and on Monday career options for plant biologists will be addressed.

Both the Committee on the Status of Women in Plant Physiology and the Minority Affairs Committee have now established annual luncheon programs. These events have been well attended and have delivered excellent programs serving to inform and unify their special populations. This year we introduce a Small Colleges Breakfast on Sunday, an event excitedly awaited by many faithful ASPP members.

ASPP is clearly interested in establishing its annual meeting as a place where plant biologists of diverse needs as well as diverse scientific interests find fulfillment. You can help us update and improve our meetings by completing a survey that will be available at the poster sessions during Plant Biology '96.

Internationalizing the ASPP Annual Meetings

Due to the diligent and conscientious work of those in leadership positions within ASPP, our annual meetings are becoming internationalized. Plant biologists from Mexico have been involved in the planning for Plant Biology '96. Our meeting location of San Antonio is a perfect setting to begin active collaboration with our Mexican colleagues. Federico

Sanchez and Hector Perez from Instituto Biotecnologia in Cuernavaca attended ASPP program committee meetings in which the design and format of the scientific program for Plant Biology '96 were established. Plant biologists from Mexico will be participating in all aspects of Plant Biology '96.

This year is only the beginning of our efforts at internationalizing the annual meeting. From here we head full speed into developing the 1997 meeting in Vancouver, B.C., now titled: Plant Biology '97: A View from the Pacific Rim. For Plant Biology '97, ASPP will continue its longstanding joint meetings with our colleagues in the Canadian Society of Plant Physiologists. Again the meeting site provided the opportunity to invite additional international colleagues to join us. The Australian and Japanese societies of plant physiologists have been in contact with ASPP president, Bob Buchanan, as the agenda for Plant Biology '97 is formulated. We hope to see in attendance many Pacific rim colleagues we see far too seldom and to make acquaintances that will enrich our research, teaching, and learning. Major symposia are planned in areas of signal transduction, ATPase, metabolic engineering, regulation of root development, and photoinhibition. Each symposium will have contributors from among our international participants.

Broadening the Range of the Scientific Program Content

Inclusiveness is a theme within the scientific program content of our meetings as well. In response to suggestions from those attending our annual meetings and from the leadership within ASPP, the number of mini-symposia has expanded from six to eight for 1996. The mini-symposia offer a wonderful opportunity for hot new topics to be explored, for updates in rapidly developing research areas to be heard, and for helpful advice and information on teaching and research techniques to be presented.

With the intention of enticing to our annual meeting those researchers working in areas in which significant advances are being made, the Program Committee has chosen to publicize early our solicitation for contributions to three of the eight mini-symposia being planned for Plant Biology '97. The topics chosen for these three mini-symposia are: programmed cell death, elevated CO₂, and osmoregulation.

A very significant development is underway which will serve to combine the talents of researchers in two sometimes overlapping but distinctive communities: ASPP and the Arabidopsis research community. Madison, Wisconsin, is the well-known U.S. meeting site for the Arabidopsis group. In 1998 ASPP will hold its annual meeting in Madison so that a back-to-back meeting with the Arabidopsis researchers can be planned. Meeting dates will be set shortly. A joint symposium will be a highlight of our collaboration, which will likely include other opportunities for interaction among attendees at both conferences.

ASPP has grown to play a significant leadership role within the scientific research community. A notable achievement is the establishment of our public affairs office which initiates effective contacts in Washington, D.C., to advance the funding and appreciation for plant biology research in both basic and applied areas. The program committee is applying its energies similarly to establish ASPP's annual meeting as a focal point which serves the larger plant biology community. Our breadth will encourage "cross-pollination", bringing the excitement of collaborative work closer to us all.

Program Committee

Each year the Program Committee members extend outstanding service to ASPP. The committee meets three times a year and is responsible for the scientific program of the annual meeting. Members of the committee this year include Don Ort (serving as past chair of the committee and as president-elect), Pam Green, David Ho, Mike Salvucci, Judy Verbeke, and Mary Jo Vesper (chair). Expert support is provided by the staff at ASPP headquarters, especially Susan Chambers.

Mary Jo Vesper
ASPP Secretary
University of Dayton



PRESIDENT'S LETTER

Building a Foundation

The inaugural meeting of the board of directors of the ASPP Education Foundation was held in downtown Washington on January 30 and 31. Chair Richard Laster, a management consultant and former long-term executive with General Foods and DNA Plant Technology, convened the meeting and announced the five appointments he had made to the board. The five are: **Charles J. Arntzen**, President, Boyce Thompson Institute for Plant Research; **Richard Barth**, Chairman, President and CEO, Ciba-Geigy, Inc.; **Charles S. Johnson**, President and CEO, Pioneer Hi-Bred International; **Hendrik A. Verfaillie**, Executive Vice President, Monsanto, Co.; **David S. Weir**, President, Global Technology, DuPont Agricultural Products. Of the five, David Weir and Charles Arntzen were unable to attend.

Established by vote of the membership in 1994, the Foundation charter calls for up to seven additional appointments, bringing the total to possibly as high as twelve. There are, in addition, six *ex officio* members from the ASPP executive committee: **Bob B. Buchanan**, President; **Mark**

Jacobs, Treasurer; **Donald R. Ort**, President-Elect; **James N. Siedow**, Immediate Past President; **Larry N. Vanderhoef**, Chair, Board of Trustees; **Kenneth M. Beam**, Executive Director.

In its deliberations, the board broadened the mission of the Foundation: To develop a broad understanding of the importance of plant sciences in providing an on-going economic supply of food, fiber, and renewable fuel as well as sustaining a healthy environment.

The goals of the Foundation remain unchanged:

- To advance public understanding and appreciation of the value of the plant sciences to society
- To promote teaching of the plant sciences at all levels
- To support the development of new initiatives in emerging areas of education in the plant sciences
- To provide a means for individuals and organizations to support education and research in the plant sciences

In pursuit of these goals, the Foundation will be part of a national effort to

increase scientific literacy of the general public. For example, the Foundation will be working alongside organizations such as the National Academy of Sciences, which has recently established a Center for Science, Mathematics and Engineering Education, under the chairmanship of former Stanford University president Donald Kennedy, to pursue a similar but broader agenda. The challenge is indeed demanding. If we take math as an example, recent analyses show that only 2% of American students achieved math scores comparable to the top 50% of their Japanese counterparts. Similar comparisons hold for a number of European countries.

The board was advised of progress that ASPP is making in the public education arena largely as a result of efforts of our education committee. Representatives attending the board meeting, chair Carl Pike and member Dina Mandoli, described the activities of the education committee, including the successful teachers' workshop held last year in Charlotte and the follow-up planned this year for San Antonio.

Dr. Mandoli also demonstrated "the cube"—a popular description of plant biology she has composed to be printed on a piece of cardboard that folds into a cube. Information presented on the cube can be adjusted so as to appeal to different grade levels, for example, grades 6-8 or 11-12. The board uniformly believed that the cube would attract interest in plant physiology and related areas of plant biology. The board discussed the types of materials that would be most effective as follow-ups to the cube and provided the education committee with several new ideas to consider in its current efforts. The ASPP homepage on the Internet will play an increasingly important role in providing access to the follow-up materials and initial contact for other interested students.

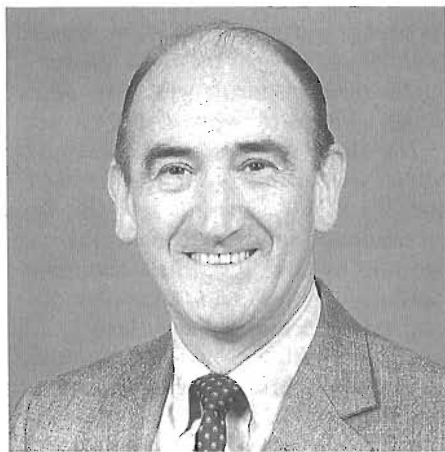
The education committee plans to distribute the cube on a trial basis at three school districts representing the eastern, western, and central United States. Interested students, or their teachers, would



Richard Barth, left, Chairman, President and CEO, Ciba-Geigy, Inc., and Hendrik A. Verfaillie, right, Executive Vice President, Monsanto, Co., attend the first meeting of the board of directors of the ASPP Education Foundation, held January 30-31 in Washington, D.C.

"And gladly would he lerne,
and gladly teche."
Chaucer, c. 1387

Prologue, The Canterbury Tales



David S. Weir, President, Global Technology, DuPont Agricultural Products, is serving as a member of the board of directors of the ASPP Education Foundation.

contact ASPP headquarters to obtain the follow-up materials. If appropriate, headquarters staff could put the students in touch with a local ASPP mentor.

The board also discussed strategies on how to raise the funds needed to enter the new education venture. ASPP is to contribute \$60,000 of its own resources (obtained from interest on invested reserves) to help the Education Foundation get started. It was noted that ASPP members have given over \$8,000 to the Foundation so far this year. A total of \$12,000 in individual giving is anticipated by year's end. This unprecedented level of support, which comes from both domestic and overseas members, is most appreciated.

The board was asked to take the lead in raising an additional \$110,000 to meet activities planned for the year. Board members seemed optimistic that the goal

could be successfully reached. In addition to efforts of the board, each of us as an ASPP member is encouraged to identify individuals or companies interested in contributing to the Foundation and to put them in touch with Ken Beam at our headquarters office.

The board put forward names of individuals in industry who could be contacted by Richard Laster as potential new members. As the group adjourned, it was my sense that all considered the meeting a success and an excellent first step in developing the new Education Foundation. The membership of ASPP should be proud that, in pursuing an education agenda, the Society is once again at the professional forefront.

Bob B. Buchanan

1995-1996 ASPP President

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TURNING POINT

[Editor's note: Following is the third of a series of articles that are intended to describe an experiment (or "moment") that was a turning point in research consequential to the field.]

FOLLOWING THE TRAIL OF LIGHT

by Melvin Calvin, Professor Emeritus,
University of California, Berkeley

In one of my lectures many years ago I used the phrase "following the trail of light." The word "light" was not meant in its literal sense, but in the sense of following an intellectual concept or idea to where it might lead. In this case, perhaps, the original flashlight was coordination chemistry and phthalocyanine, which I will explain below.

After I finished my graduate studies at the University of Minnesota, I was fortunate enough to become a postdoctoral student of Professor Michael Polanyi at the University of Manchester. This was a most fortunate encounter for my whole scientific career, because in Manchester, working for Polanyi, I became aware of the freedom of thought that allowed me to undertake work in any area of science

that seemed appropriate to the questions I was faced with. I was not limited to physical chemistry, organic chemistry, biochemistry, or biology, but encompassed them all to some degree. (This same freedom of scientific exploration was also available under Professor Gilbert N. Lewis at the University of California, Berkeley after I joined the faculty in 1937.)

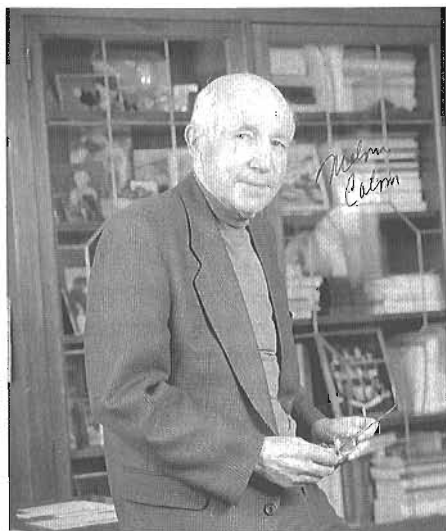
At Manchester I was introduced to coordination chemistry in its broadest sense, and coordination chemistry became a central theme of my scientific life. In the midsummer of 1936 phthalocyanine, a compound resembling in its general structure chlorophyll and heme, was first synthesized at Imperial College in London. Polanyi, a highly imaginative man, recognized that this class of compound was very similar to chlorophyll, but much more stable. He sent me to London to get a small

sample of the phthalocyanine and to learn the synthetic steps for making this material. That's where my first work on coordination chemistry and biological catalysis began, work which was to continue throughout my academic life at Berkeley.

In Berkeley, during the war years, coordination chemistry again became central to my science. A whole series of oxygen-carrying synthetic chelates, cobalt compounds that carried oxygen compounds much as does hemoglobin, was developed. This work also reinforced my interests in biological catalysis and led to a more formal interest in chlorophyll and its role in the photosynthetic process. After the war, with the availability of the long-lived isotope of carbon, carbon-14, which was discovered by Ruben and

continued on page 6

continued from page 5



Nobel laureate Dr. Melvin Calvin, author of this issue's Turning Point.

Kamen in the early '40s, it was possible to begin to study that part of the energy-converting reactions of photosynthesis represented by the carbon reduction sequence. Carbon-14 was the ideal tool for tracing the path of carbon on its way to carbohydrate and other plant products, and the unraveling of the "path of carbon" that encompassed the period 1946-1956 by many students and collaborators; the two major investigators were Andrew A. Benson and James A. Bassham. During this time all of the individual steps in the carbon reduction cycle were put together (1). There were twenty-three publications entitled "The Path of Carbon in Photosynthesis," and two books (2, 3) also summarized the effort.

One of the more elusive aspects of the search was to determine the cyclic character of the path of carbon, and this, perhaps, was the "turning point" for the elucidation of the entire cycle. It

was for me the moment (and, curiously enough, it was a moment) when one of the basic facets in the photosynthetic carbon dioxide cycle became clear to me. One day I was sitting in the car, probably parked in a red zone, while my wife was on an errand. I had for some months some basic information from the laboratory that was incompatible with everything that, up until then, I knew about the cyclic nature of the process. While sitting at the wheel of the car, the recognition of the missing compound occurred just like that—quite suddenly. Suddenly, also, in a matter of seconds, the complete cyclic character of the path of carbon became apparent to me. But the original recognition of phosphoglyceric acid and how it got there, and how the CO_2 acceptor might be regenerated, all occurred in the matter of thirty seconds (4).

So, there is such a thing as inspiration, I suppose, but one has to be ready for it. I don't know what made me ready at that moment, except I didn't have anything else to do but sit and wait. And perhaps that in itself has some moral. Perhaps also the sudden insight into the cyclic character of the cycle might have resulted from the fact that the right answer came about as a result of an instinctive creative trick.

My personal philosophy perhaps is expressed best in the following statement: "There is no such thing as pure science. By this I mean that physics impinges on astronomy, on the one hand, and chemistry and biology, on the other. The synthesis of a really new concept requires some sort of union in one mind of the pertinent aspects of several disciplines . . . It's no trick to get the right answer when you have all the data. The real creative trick is to get the right answer when you have only half of the data in hand, and half of it

is wrong, and you don't know which half. When you get the right answer under those circumstances, you are doing something creative" (4).

The "light" of coordination chemistry which was turned on in Manchester in the '30s is still shining today. The same scientific continuity extends to the work in the area of artificial photosynthesis, where the redox chemistry of manganese complexes may lead eventually to the design of a synthetic device to perform the photolysis of water. From phthalocyanine to chlorophyll to manganese compounds, the light has led to the point where it may be possible in the not too distant future to mimic the natural process of photosynthesis and learn in minute detail the principles of photochemical conversion and storage of solar energy.

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5. M. Calvin (1992) Following the Trail of Light: A Scientific Odyssey, American Chemical Society, Washington, DC.

University Professor of Chemistry Emeritus Melvin Calvin, who received his Ph.D. degree from the University of Minnesota in 1935, joined the staff of the Department of Chemistry at the University of California at Berkeley in 1937 after two years of postdoctoral study at the University of Manchester, United Kingdom. Calvin was the director of the Laboratory of Chemical Biodynamics from 1960-1980, director of the Chemical Biodynamics Division of the Lawrence Berkeley National Laboratory from 1945-1980, and associate director of Lawrence Berkeley National Laboratory from 1967-1980. Calvin received the Nobel Prize in Chemistry in 1961 for his work on carbon dioxide assimilation in plants. He is the recipient of other important awards and honors including The Davy Medal of The Royal Society, the National Medal of Science, and the Priestley Medal of the American Chemical Society. Calvin is the author of over five hundred scientific papers and eight books. A member of the National Academy of Sciences, Calvin also was president of the American Society of Plant Physiologists in 1963-1964 and the American Chemical Society in 1971.

Public Affairs

ASPP EXPLAINS THREATS TO AGRICULTURE POSED BY RESEARCH CUTS

In testimony presented to the U.S. House of Representatives Appropriations Subcommittee on Agriculture, ASPP Committee on Public Affairs Chair Ralph Quatrano discussed some of the problems created for farmers and the agricultural sector by reductions in agricultural research.

Dr. Quatrano, University of North Carolina, Chapel Hill, said that overall constrictions in the federal discretionary budget threaten to slow the research and development that would create the new tools farmers will need in future years. Dr. Quatrano urged the committee to increase support for the National Research Initiative Competitive Grants Program, Agricultural Research Service, and other key research programs within USDA to give farmers the tools they will need to meet greater future needs for food and fiber of the nation and the world.

"American farmers face pressures to reduce use of chemicals while at the same time increase crop production on the same number of acres," Dr. Quatrano noted. He explained that the research community can provide solutions to otherwise intractable problems in agriculture if there is adequate support for research.

Dr. Quatrano cited several examples of USDA-supported research that addresses serious threats to production of major crops. A number of the examples of research he mentioned were conducted in labs within the Congressional districts of the members of the subcommittee.

Plant tolerance to salt and drought stress is being approached by a number of promising studies supported by the NRICGP. "Stress resistance can be achieved in plants by a number of different mechanisms, but one of the most promising is to produce chemical protectants in plants by inserting genes that will result in the increase in the concentration of these protectants," Dr. Quatrano said. He noted that research on transgenic plants overproducing these protectants demonstrated that the plants

are normal under non-stress conditions, but under salt-stress, for example, the transgenic plants did not wilt, developed more leaf mass, flowered, and produced viable seeds. In contrast, the non-transformed plants decayed beyond rescue. "This discovery will lead to the development of hardier varieties of major crops grown in the U.S. that will be more resistant to drought stress," Dr. Quatrano said.

"Take all" fungal disease is the most destructive root disease of wheat. Resistant varieties are not available and chemical pesticides are ineffective. Dr. Quatrano explained that the NRICGP is supporting studies to investigate the value of "disease suppressive" soils. The suppressive soils contain bacteria that produce antibiotics that kill the fungal pest. Living seed treatments of these antagonistic bacteria protect wheat against "take all."

Holding up cover stories of plant science research supported by the NRICGP published in *Science*, *Nature* and *Cell*, Dr.

Quatrano noted that the relatively small competitive grants program has gained recognition for supporting leading research.

"I can personally attest to another valuable component of the NRI funding—that is the support it provides for the training of the next generation of agricultural scientists," Dr. Quatrano said.

The agricultural research budget may face further constrictions this year. Special grants supported by the congressmen and senators who represent districts and states receiving the grants are sometimes supported by funds the administration originally proposed for the NRICGP. Testimony, constituent visits, and letters by members of ASPP and other science societies offer support needed for the competitive grants program. These efforts have helped demonstrate the need for increased support for the NRICGP within USDA and contribute to the effort to find an additional source of competitive grant support. (See related story on a new competitive grants initiative page 9.)

PLANT BIOLOGY '96

&

SAN ANTONIO

WILL GIVE YOU "SOMETHING TO REMEMBER"

Registration information for the
1996 ASPP annual meeting

will be arriving soon—

REGISTER EARLY!

CHAIRMAN MYERS CONFIRMS STRONG SUPPORT FOR BASIC RESEARCH

In testimony before the House Appropriations Subcommittee on Energy and Water Development, Dr. Louis Sherman of the ASPP Committee on Public Affairs requested increased support for the Department of Energy (DOE) Division of Energy Biosciences.

Dr. Sherman of Purdue University also met in advance of the hearing with Subcommittee Chairman John Myers (R-IN) in his office and thanked him for his support of basic research within the Division of Energy Biosciences. Chairman Myers acknowledged that it was the work of Myers's staff, which was contacted by Dr. Sherman last year at a critical time, that protected several million dollars in basic research dollars for the Division of Energy Biosciences. The work of Dr. Sherman, his colleagues at Purdue, Ken Keegstra of Michigan State University, and other ASPP members with Chairman Myers's office and the Subcommittee averted more than \$3 million in cuts in the Division of Energy Biosciences in the Fiscal Year 1996 budget.

The Division's budget for Fiscal Year 1996 was \$30.2 million which represented an increase of 4.5 percent over the Fiscal Year 1995 appropriation. The appropriation for the Division enacted into law last year also exceeded the President's request of \$29.5 million for Fiscal Year 1996. The

President's proposal for the Fiscal Year 1997 budget had not yet been released when Dr. Sherman of Purdue University testified February 29. The President's proposal was expected to be released the week of March 18.

In his testimony, Dr. Sherman explained the importance of basic research on plants in addressing the nation's energy needs. He noted that many of the important programs funded by the Division of Energy Biosciences show how organisms use the sun's energy, either directly or indirectly, to make or destroy important compounds. For example, these projects study how plants and other photosynthetic organisms use the sun's energy for production of chemical energy, biosynthesis of potential fuels, biosynthesis of petroleum-replacing compounds such as polystyrene, production of high levels of lauric acid in specially constructed strains of plants and production of hydrogen. Other studies are involved with using biological systems to break down otherwise harmful compounds. Examples include studies to understand metabolism and detoxification of toxic substances, cellulose degradation, and fossil fuel desulfurization.

"These biological processes will prove to be extremely valuable in developing new energy sources or in ensuring that we can use current energy sources in a

cleaner and more healthful fashion," Dr. Sherman said.

He explained that the research programs are divided into three categories: using the sun's energy to manufacture chemicals, using plants and microbes to manufacture new products, and using plants and microbes to clean up toxic wastes in a process called phytoremediation.

This year marks the retirement of both Chairman Myers and ranking Democrat and former chairman Tom Beville (D-AL) from the Congress after 30 years of service. Both congressmen are highly regarded senior statesmen who have a strong record of support for basic research. Dr. Sherman said he regretted seeing the retirement of Congressmen Myers and Beville, who have made many contributions in Congress to science. Chairman Myers responded that Dr. Sherman and his colleagues may see him more often after this Congress since he would be able to attend more Purdue basketball games.

In a letter from ASPP President Bob Buchanan, Committee on Public Affairs Chair Ralph Quatrano, and Dr. Sherman to Chairman Myers after he announced his retirement, they noted "the gracious manner in which you relate to colleagues, constituents and representatives of the science community is a hallmark of statesmanship that you've come to define."



ASPP member Lou Sherman (right) of Purdue University thanks Congressman John Myers (R-IN) for supporting basic research funded by the DOE Division of Energy Biosciences.

INTERIM LEGISLATION KEEPS NSF DOORS OPEN AS AGREEMENT ON FULL-YEAR BILL REMAINS ELUSIVE

By mid-March, Congress moved somewhat closer to the President's requested numbers for an appropriations bill including funding for the National Science Foundation (NSF) and many other federal agencies currently operating without a full-year appropriation. However, agreement on a Fiscal Year 1996 appropriations bill was not reached in advance of the March 15 expiration date for the current budget resolution funding NSF and many other agencies.

To prevent another partial government shutdown, Congress cleared on March 14 a one-week spending bill to give negotiators more time to draw up a Fiscal Year 1996 appropriations bill that would be in effect until September 30, 1996—the end of the current Fiscal Year.

The FY 96 appropriations bill (H.R. 3019) passed by the House on March 7 included spending provisions for VA, HUD and Independent Agencies (including NSF and NASA); Commerce, Justice, State and Judiciary; and the Interior. Earlier appropriations bills for these agencies were vetoed. H.R. 3019 also includes funding for Labor,

Health and Human Services and Education.

H.R. 3019 provides \$2.274 billion for Research and Related Activities at NSF—a decrease of \$6 million or two-tenths of a percentage point from the FY 95 appropriation. NSF Education and Human Resources would be funded at \$599 million under the bill. This is the same amount the President requested and a reduction of less than \$7 million, or one percent, from last year's appropriation. The House passed the bill 209 to 206 divided largely along party lines.

If NSF was the only item in the bill, there is little doubt that the President would sign it; however, the White House has threatened a veto over cuts for environmental regulation, national volunteer service, and provisions affecting several other agencies which are lumped into the same bill with NSF.

It is generally regarded by followers of the beleaguered discretionary domestic budget, which includes research, that NSF did well in the House-approved appropriation that saw deep cuts in some other

discretionary domestic programs. The majority, led in the House by Science Committee Chair Bob Walker (R-PA), Speaker Newt Gingrich (R-GA), John Myers (R-IN), Jerry Lewis (R-CA), Vern Ehlers (R-MI) and others, sought to preserve funding for basic research including research supported by NSF.

However, there have been comments from some who protected basic research programs from deep cuts that the science community has been quieter than other interests about the need for support. Some in Congress have described the approach of the broader scientific community to Congress in this era of balancing the budget as "arrogant" with scientists simply expecting full funding for their programs.

ASPP has the most active constituent contact network in the plant science community. ASPP campus contacts urged their members of Congress to support NSF in the FY 96 appropriations bill and have actively supported key research programs within USDA and DOE.

USDA NEW COMPETITIVE GRANTS INITIATIVE CONSIDERED IN CONFERENCE

The Agricultural Competitiveness Initiative (ACI), which would be a new USDA competitive grants program in addition to the National Research Initiative Competitive Grants Program (NRICGP), has taken on a new form in the Senate-passed version of the Farm Bill.

The Senate bill would provide up to \$100 million over three years for a new competitive grants program for research, education, and extension as part of the proposed Fund for Rural America. Funds would be provided by the Commodity Credit Corporation from what was formerly commodity price support funds. Commodity Credit Corporation funds are part of the mandatory instead of the discretionary portion of the federal budget. The NRICGP and other research programs are funded out of the discretionary part of the federal budget.

The prospects for approval of a new competitive grants program as part of the Fund for Rural America are considered higher than the chances were for another proposal for the ACI that was defeated on the House Floor on February 29. Congressman Cal Dooley (D-CA) offered an amendment to the Farm Bill which would have provided nearly \$2 billion over seven years in Commodity Credit Corporation funds for the ACI.

Opponents of the amendment said an amount that high for the ACI would bust the agreement reached to reduce commodity price supports to the level they were already at in the bill. The baseline for farm program payments has gone down from \$56 billion to \$36 billion. Dooley's amendment would have taken the base line down to about \$34 billion. However, Dooley pointed out that farm-

ers and taxpayers would be "far better served if we could just take \$2 billion of that \$36 billion over the next seven years and invest it in agricultural research."

Dooley's amendment was similar to Sen. Richard Lugar's original proposal in the Senate and provided clear language on how to run an effective competitive grants program modeled in large part after the NRICGP.

The version now in the House/Senate conference has some provisions that need further clarification or modification. There is an overly broad limitations section in the Fund for Rural America research section and vaguely worded provisions on peer review. ASPP is working through its campus contact network to seek needed revisions including increased funds for

continued from page 9

research in the new initiative.

Committee on Public Affairs Chair Ralph Quatrano of the University of North Carolina met with Sen. Jesse Helms (R-NC) staff on the competitive grants program concerning needed changes at the time that the conference was starting. Committee on Public Affairs member Lou Sherman of Purdue University met with Agriculture Committee staff of Chairman Richard Lugar (R-IN) to discuss needed revisions in the Senate bill less than two hours after the Dooley amendment was defeated. Lugar is heading up the confer-

ence for the Senate with Helms as a member. ASPP President Bob Buchanan and Dr. Quatrano sent a letter to key conferees outlining suggested revisions.

ASPP public affairs staff has also discussed the need for revisions with House Agriculture Committee Chair Pat Roberts (R-KS) staff, ACI proponent Congressman Mike Crapo's (R-ID) staff, White House Office of Science and Technology staff, USDA officials, representatives of agricultural experiment stations and land grant colleges, and others. Congressman Crapo is developing with Chairman Roberts improved language for the bill.



CoFARM AD URGES SUPPORT FOR WORLD-LEADING USDA RESEARCH

An advertisement scheduled to run on Monday, March 25, in the weekly and daily *Congressional Monitor* publications urges support for USDA research. ASPP public affairs staff recommended running the ad to the Coalition on Funding Agricultural Research Missions (CoFARM) and chaired the subcommittee which drafted it. The advertisement attempts to relate agricultural research on plants and animals to fundamental aspects of people's daily lives. House Agriculture subcommittee hearings on the research title of the Farm Bill are scheduled to begin the same week the ad will run. The ad reads as follows:

Support World-Leading USDA Research

The food you and your family eat...

The clothes you and your family wear...

The building materials for the house in which you live...

The paper you are reading from now...

...are more available, more affordable and of higher quality because of public-supported fundamental and applied agricultural research on plants, animals and the economic system which produce food and fiber.

You can assure the continued supply of food, shelter and clothing essential to the security of individuals, families, the nation and the world by supporting continued world-leading research of the U.S. Department of Agriculture including the National Research Initiative Competitive Grants Program, the Agricultural Research Service, the Economic Research Service, the National Agricultural Statistics Service, and land grant institutions.

This copy is followed by a listing of CoFARM members including the American Society of Plant Physiologists. The *Congressional Monitor* has a paid circulation of nearly 1,000 among Congressional offices, 177 in the executive branch, 51 in independent agencies, 6 in the White House, 77 other government subscribers, 114 media, and 1,400 organizations such as associations, law firms, public affairs offices, and lobby groups. The *Weekly Congressional Monitor* Monday issue adds another 963 government subscribers and nearly 500 additional organizations and media subscribers.

The ASPP Education Foundation welcomes your contributions to help it achieve its goal of increasing public awareness of the vital importance of basic plant science research. For more information on how you can support this effort, contact Kenneth M. Beam, ASPP executive director, 15501 Monona Drive, Rockville, MD 20855-2768; kenbeam@aspp.org.

ASPP Education Forum

Edited by Bob Wise, Department of Biology, University of Wisconsin Oshkosh, Oshkosh, WI 54901, e-mail wise@vaxa.cis.uwosh.edu.

Luster Appointed to National Panel

ASPP member and USDA-ARS scientist Doug Luster has been selected (upon nomination by Frederick County, Maryland, educators) to serve on a National Assessment of Educational Progress (NAEP) panel, March 21, in St. Louis, Missouri, to help set U.S. achievement goals in life sciences for the 12th grade. The workshop will be administered by American College Testing in accordance with President Clinton's Goals 2000—Educate America Act. This will be an excellent opportunity for ASPP to help define academic standards in plant science for U.S. high school seniors. The subsequent national assessment process will provide an appraisal of the current level of science literacy (to include plant science, we hope) in U.S. high schools.

NSF Grant Awards to Disseminate Research Results to Public

The Informal Science Education (ISE) program in the Division of Elementary, Secondary, and Informal Education of the National Science Foundation will provide up to ten supplemental awards of a maximum of \$50,000 each to assist in the broader dissemination of research results and to promote science literacy for the general public in an out-of-school setting. The program is available to current principal investigators funded by the Directorate for Biological Sciences. The request for a supplemental award may be submitted any time between February 1 and June 14, 1996. The supplement can be used for any activity that falls within the definition of an informal science education activity such as media presentations, exhibits, or youth-based activity. The supplement can be used to disseminate research results, research in progress, or research methods.

Before a supplement is submitted, an

interested principal investigator will need first to contact his/her Program Director in the BIO Directorate who in turn will direct the PI to the appropriate program director in the ISE program. SGERs, Conference, Symposia, and Workshops; Dissertation Improvement Awards; and Postdoc Fellowships are not eligible for these supplements. For further information, contact the program director for your NSF grant or access the NSF Homepage at <http://red.www.ehr.nsf.gov/EHR/ESIE/resawrd/LETTER.htm>.

Education Booth Has Vacancies for San Antonio Meetings

The Education Booth has been a popular feature at recent ASPP meetings. Displays in the past have included such things as the use of the Internet in plant education and demonstrations of successful teaching labs. Room is still available for more displays at the 1996 Education Booth being put together for the San Antonio meetings. Contact Carl Pike (Franklin Marshall College) at c_pike@acad.fandm.edu with your display or demonstration ideas or for more information.

K-12 Microscopy Educational Resources Now on the WWW

Dr. Susanne Pignolet Brandom, editor of MicroWorld News, an e-mail newsletter for microscopists and microanalysts, has announced a new section to the MicroWorld Resources WWW site at <http://www.mwrn.com/> called, "K-12 Educational Resources." It includes the categories:

- An introduction to microscopes and their uses
- Examples of the uses of microscopes in the classroom
- WWW sites for learning about microscopic worlds
- Best sites for obtaining images for educational uses
- Books
- Meta-lists of K to 12 educational

resources in the sciences

- Projects for at home and in the classroom (under construction)

The owners of the images at the WWW sites listed in the Best Sites for Obtaining Images for Educational Uses have given permission for the images to be used for non-commercial educational use. Included in the use is the printing of the images for the classroom or for reports. Images will also be available for a "What Is It?" game that will include familiar objects such as a flea, an eggshell, and velcro. Several microscopists, including Michael Davidson of the University of Florida and Dennis Kunkel of the University of Hawaii, have agreed to contribute images for the game.

If you would like to contribute, please send a description of your site and the URL to spb@wwa.com. If you do not have a WWW site and have images, projects for kids, or ideas to share, MicroWorld will post these for the benefit of all. Contact Susanne at MC Services, 847-548-6522, e-mail spb@wwa.com.

Plants in Education To Be Featured at NEASPP Annual Meeting

The 60th Annual Meeting of the Northeast Section of American Society of Plant Physiologists will be held on May 3-4, 1996, at the State University of New York at Plattsburgh. A symposium on Friday afternoon entitled "Regulation: Cell Signals, Cell Function and Cell Death" will feature talks by Dr. Judy Callis (UC Davis) and Dr. Eduardo Blumwald (University of Toronto). The Friday evening session will be composed of a Teaching Forum moderated by Bernard Rubinstein (University of Massachusetts - Amherst) and focussing on "Consciousness Raising: Emphasizing Plants in the Biology Curriculum." The teaching forum will also include short presentations by a high school science teacher and a community college instructor.

continued from page 11

Posters and platform presentations are scheduled for Saturday morning. All interested members, particularly students, are encouraged to attend and present their current research findings. For more information or for a paper copy of the meeting announcement and registration form, contact the hosts, Dr. Peter Conrad

(conradpl@splava.cc.plattsburgh.edu) or Dr. Janice Marchut Conrad (marchuj@splava.cc.plattsburgh.edu).

NSF SME&T Review Ready for Comment

In the fall of 1995, the NSF began a review of science, mathematics, engineering, and technology (SME&T) (see ASPP Education Forum, Sept/Oct, 1995). The SME&T review is expected to provide guidance as to how large-scale changes in undergraduate education could be designed to improve quality and how NSF can most effectively capitalize on recent investments made in undergraduate science education. A document entitled "Preliminary Report: The National Science Foundation's Review of Undergraduate Science, Mathematics, Engineering and Technology (SME&T) Education" by Melvin George, chair of the advisory committee to the Directorate for Education and Human Resources, is now available on the World Wide Web

for input from all interested educators. This report culminates Step 2 of the three-step NSF review. In Step 3, NSF will seek to publicize and encourage implementation of those practices that will achieve improved science and technology literacy, a technically more capable workforce, better prepared teachers and scientists and engineers, and broader participation in SME&T careers.

The preliminary report can be found at: <http://www.ehr.nsf.gov/EHR/DUE/hearings/prelim.htm>. From this page you can review the document, as well as offer comments and suggestions via e-mail or fax. For those of you who do not have the capability to view the document on the Internet, please contact Project Kaleidoscope for a copy of the preliminary report (voice: 202-232-1300; fax: 202-331-1283).

New Videos on Plant Growth Available

David Attenborough's recent PBS series "The Private Life of Plants" is now available on video. There are five tapes, all with fantastic time-lapse footage covering all aspects of plant growth and development. This is a spectacular and very professional production. Contact Turner Home Entertainment (800-544-9090) and ask for "Plants, Private Life of Videos". The price is \$99.98 plus shipping and handling.

NATIONAL ACADEMY OF SCIENCES TO FEATURE SYMPOSIUM ON PLANT BIOLOGY

Washington Area Plant Scientists and Students Invited to Attend

On April 30, 1996, at its annual meeting, the National Academy of Sciences will hold a plenary symposium entitled "Frontiers in Plant Biology: How Plants Communicate." This is a unique opportunity to showcase before members of the Academy and the public at large some of the exciting advances that have recently been made in plant biology.

The symposium will deal with unique signaling systems by which plants mobilize defenses against pests and pathogens; by which roots interact with soil microorganisms; by which self-fertilization is prevented; and by which plants perceive cues from the environment to optimize their growth and development. The speakers and the titles of their talks will be: Clarence A. Ryan (Washington State University): Signals that activate plant defenses against herbivores and pathogens; Sharon R. Long (Howard Hughes Medical Institute, Stanford University): Life in the underground: The chemical language of plants and symbiotic bacteria; Teh-hui Kao (Pennsylvania State University): How flowering plants discriminate between self and non-self to prevent inbreeding; and Joanne Chory (Salk Institute for Biological Studies): From seed germination through flowering, light controls plant development via the pigment phytochrome.

The symposium will be held in the auditorium of the Academy, 2101 Constitution Avenue, N.W., Washington, D.C. on April 30 from 2:00 to 4:30 PM, and is open to the public. Plant scientists in the Washington area, including graduate and undergraduate students, are invited to attend. No registration is required.

OBITUARIES

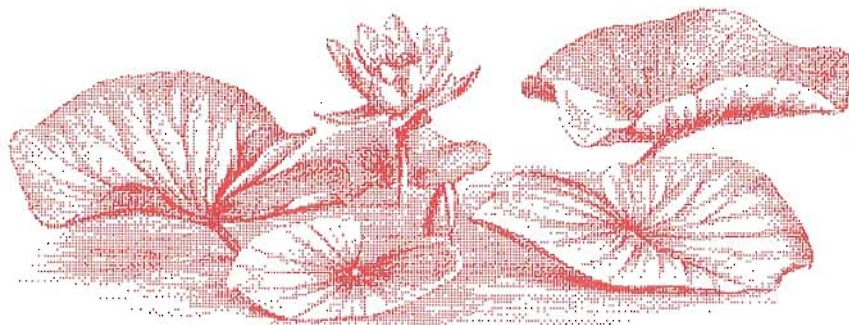
Franklin B. Gailey

Professor Franklin B. Gailey, emeritus member from Berea College in Berea, Kentucky, died on October 25, 1995. Dr. Gailey joined ASPP in 1955.

Robert M. Muir

Robert M. Muir, emeritus professor of plant physiology at the University of Iowa, died in Iowa City on February 20, 1996, at the age of 78. He graduated from the University of Wyoming in 1938 and was a Rhodes Scholar in Oxford, England, in 1938-1939. Following service in the Army Air Corps during World War II, Dr. Muir received his Ph.D. from the

University of Michigan in 1946. From 1946 to 1948, he was on the faculty of Pomona College in Claremont, California. He joined the faculty of the University of Iowa in 1948 and taught plant physiology until his retirement in 1988. Dr. Muir had been a member of ASPP since 1949.



Japanese Society President Urges American-Asian Meetings

Second in a series by officers from plant physiology and related societies from other countries.

In 1980 a graduate student in our laboratory, Mieko Mitsuhashi, attended the meeting of the Western Section of the American Society of Plant Physiologists, held that year in Pullman, Washington, to present a paper on portulac—a novel rooting promoting substance we had isolated from *Portulaca* leaves. Her participation at the meeting was rewarded by selection as a winner of the "Pacific Division AAAS Award for Excellence." From that time on I have entertained friendly sentiments toward ASPP. [EDITOR'S NOTE: In the '70s and early '80s, the Western Section of ASPP occasionally held its annual meeting jointly with AAAS's Pacific Division, as was done in Pullman in 1980.]

It is, therefore, my great pleasure to be president of the Japanese Society of Plant Physiologists in 1997 when ASPP and the Canadian Society of Plant Physiologists are planning to meet jointly in Vancouver, British Columbia, with JSPP and the Australian Society of Plant Physiologists. While final approval awaits a few formalities on our side, I am confident that we will be able to join the Vancouver meeting and have a wonderful and productive time.

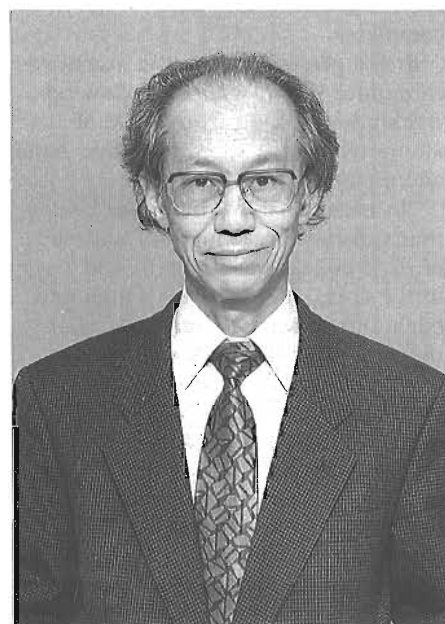
Furthermore, I hope the meeting will be an unqualified success and become the

first a series of meetings of ASPP and JSPP. Why couldn't one out of every three or four of these joint meetings be held in an Asian country? It is not easy to raise travel funds for young plant physiologists in Japan. Joint meetings in Asia would offer excellent opportunities for young plant physiologists in China, Indonesia, Japan, Korea, and other Asian countries to exchange information with one another as well as members of ASPP. In addition, Americans might learn more about our science as well as our countries.

How many papers from ASPP journals have I cited in my publications? I am unable to answer off-hand. It is impossible for me to prepare articles without referring to papers published in *Plant Physiology* and *THE PLANT CELL*. I believe this holds true for every Japanese plant physiologist. Both journals are widely distributed in Japan and attract the attention of every Japanese plant physiologist. As you know, JSPP publishes an international journal for physiology, biochemistry, molecular biology, and cell biology of plants and microorganisms: *Plant and Cell Physiology*. As president of JSPP and former editor-in-chief of *Plant and Cell Physiology*, I am eager to find out the extent to which American plant physiologists are interested in our journal. A subscription to *Plant and Cell Physiology* is the best way to learn about the plant sciences in Japan. I believe that information on research in Japan will help American plant physiolo-

gists. So, I sincerely hope that many more American plant physiologists will become members of JSPP, contribute articles to the journal and in this way enjoy and benefit from plant science research that originates in Japan.

Hiroh Shibaoka, President
Japanese Society of Plant Physiologists



Professor Hiroh Shibaoka, president of the Japanese Society of Plant Physiologists.

Do You Have News for the Plant Physiology World?



Send It to ASPP News.

The staff of ASPP News welcomes your news items, comments, and suggestions. Send your e-mail comments to ASPP News editor Jody Carlson, jcarlson@aspp.org, or publications assistant Sylvia J. Braxton, sbraxton@aspp.org.

EXECUTIVE COMMITTEE ENDORSES AFFIRMATIVE ACTION STATEMENT

Committee on Status of Women in Plant Physiology Proposes Policy Stand

The executive committee of the American Society of Plant Physiologists, at its winter meeting February 24, 1996, in Rockville, Maryland, adopted a policy statement on the issue of affirmative action. The action was taken at the urging of executive committee member Elizabeth Bray, chair of the Committee on the Status of Women in Plant Physiology, who presented the recommendation on behalf of her committee.

Bray's presentation to the executive committee began with the following description of the current state of affairs with regard to affirmative action and equal opportunity:

"In recent months, there has been much discussion about, and criticism of, U.S. policies, regulations, and laws in the areas of affirmative action and equal opportunity. These policies, regulations, and laws were designed to promote diversity within American society and to prohibit discrimination based on race, color, national origin, religion, sex, ancestry, or age. As an example of the debate, the Regents of the University of California, while simultaneously endorsing the pursuit of diversity, have approved two measures that could, in fact, impede that very

pursuit. One will forbid the university from using race, ethnicity, and gender as supplementary criteria in admissions procedures; the other will forbid the university from using these same criteria in its employment and contracting practices. These and other actions have brought affirmative action and equal opportunity to the fore."

Bray then urged the executive committee to adopt a policy committing ASPP to support of affirmative action. The committee voted unanimously to endorse the following statement:

"The American Society of Plant Physiologists (ASPP) is committed to diversity within its membership and in the institutions of its members, and to the enhancement of opportunities for all individuals. Therefore, ASPP supports equal opportunity and affirmative action as well as the laws and regulations that are meant to achieve these goals. Diversity in the research and teaching communities, i.e., the colleges, universities, governmental, and industrial facilities where our members work and study, is important to the maintenance of excellence in science and to a broader understanding of the scientific process in the community at large. The affirmative action and

equal opportunity programs operative today have made our institutions better places, but there is still work to be done."

FREEDOM TO COPY BROADENED IN ASPP JOURNALS

Written Permission to Copy for Educational Purposes No Longer Required

Beginning now, by an action taken by ASPP's executive committee at its winter meeting, copying for educational purposes from ASPP's journals, *Plant Physiology* and *THE PLANT CELL*, will be much easier.

Recent legal decisions regarding the so-called fair use provision of the 1976 copyright law have strongly favored the rights of copyright holders. As a consequence, libraries and campus copying centers and commercial copying companies have become extremely cautious as they seek to avoid the possibility of expensive legal action for copyright violation.

As a further consequence, an entire new industry has sprung up around the necessity to obtain written permission and, often, to pay fees to be able to copy journal material even for clearly educational purposes. The process can be exasperatingly slow and potentially costly, so that the ultimate consequence, frequently, is that people throw up their hands and abandon the project.

To try to resolve this dilemma, at least for ASPP's journals, the executive committee approved a new statement that will be published in both journals that states, in part: "Permission to make digital or hard copies of part or all of this work for personal or classroom use is granted without fee provided that copies are not made or distributed for profit or commercial advantage and that copies bear this notice and the full citation on the first page . . ." The language of this statement has been adapted from language promulgated by the Association for Computing Machinery, Inc.



The ASPP executive committee at its 1996 winter meeting, February 24, at ASPP headquarters in Rockville, Maryland. Standing, left to right: William Outlaw, Sharman O'Neill, Daniel Bush, Kenneth Keegstra, Larry Vanderhoef, Stanley Roux, Jerry Cohen, Elizabeth Vierling, Mark Jacobs, Mary Jo Vesper, Kenneth Beam, Elizabeth Bray, Wendy Boss, Bernard Rubinstein (substituting for Subhash Minocha). Seated, left to right: James Siedow, Bob Buchanan, Donald Ort.

It will no longer be necessary, then, to obtain written permission to copy for coursepacks from *Plant Physiology* and *THE PLANT CELL*. This blanket permission will also extend to graduate students who wish to place copies of published articles in their theses or dissertations.

Any questions about this new policy can be addressed to Jody Carlson, Publications Director, American Society of Plant Physiologists, 15501 Monona Drive, Rockville, MD 20855-2768; telephone 301-251-0560, ext. 17, fax 301-279-2996, e-mail jcarlson@aspp.org.

Postdoctoral Fellowship Program of the Life Sciences Research Foundation Princeton University, Princeton, New Jersey

The Life Sciences Research Foundation (LSRF) is an organization that administers a postdoctoral fellowship program covering all areas of biology. Although most of the fellowships are related to biomedical research, there are opportunities for persons working in areas of plant sciences. Support for fellowships in plant sciences has been contributed principally by the U.S. Department of Energy's Division of Energy Biosciences since 1989. Past LSRF fellows supported by funding from Energy Biosciences have worked in the laboratories of Daniel J. Arp, and others.

For further information regarding LSRF fellowships, contact: Life Sciences Research Foundation, c/o Lewis Thomas Laboratories, Princeton University, Princeton, NJ 08544; telephone 609-258-3551, World Wide Web <http://lsrf.molbio.princeton.edu>.

Summer Biochemistry Course Off for 1996 but On for 1997

The Advanced Plant Biochemistry Summer Course that has been held in previous years with the assistance of ASPP will not be held in 1996. However, this course will be offered in the summer of 1997 at Washington State University. Inquiries about the 1997 course should be directed to the Plant Biochemistry Research and Training Center, Washington State University, Pullman, WA 99164-6340.

SECTION NEWS

Washington Area Section

Forty-eight people, including nine students, attended the February 23 winter meeting of the Washington Area Section of the ASPP, which was held in College Park, Maryland.

At the business meeting, Ken Beam, executive director of ASPP, spoke about the overall activities at ASPP headquarters. Ken reported that both *Plant Physiology* and *THE PLANT CELL* are doing great—submissions are up and the quality of the science remains at the highest level. The Society appears to be in good fiscal health, and we will once again finish 1995 in the black. He singled out the new ASPP Education Foundation for discussion, listing some of the new industry leaders that have joined the Foundation board. This foundation plans to raise over \$100,000 in 1996 to fund new programs for the Society. Mr. Beam emphasized that members of the foundation will be reporting to the elected ASPP leadership.

Brian Hays, ASPP director of public affairs, reported on the public affairs activities of ASPP. He announced a Congressional exhibition and reception scheduled for March 19 in which ASPP will join other organizations in showing members of Congress and their staff leading research funded by the National Science Foundation. ASPP members will also testify before Congressional committees in February and March. Brian spoke about the many science coalitions in which ASPP is active. Finally, the Farm Bill and the contributions that ASPP has made in strengthening this important legislation were discussed.

Jerry Cohen, the sectional representative to the ASPP Executive Committee, gave a detailed report on the activities of the Society. He summarized some of the changes being made in our journals. Jerry, who has been named chair of the newly re-formed ASPP membership committee, also pointed out the need to recruit new members to the Society. To underscore the importance of this issue, President Bob Buchanan has made increasing the number of members in the Society his top priority.

Dr. Stan Roux of the University of Texas at Austin gave a seminar entitled "Spac-

ing out with Ferns," describing his laboratory's research into gravity-sensing mechanisms and the establishment of polarity of rhizoid growth from germinating spores of the fern *Ceratopteris*. This fascinating talk was followed by a banquet and the chance to catch up on news of the past few months.

The WAS-ASPP spring meeting is scheduled for May 9-10 at the National Arboretum in Washington, D.C.

Respectfully submitted,
Robert D. Slocum
Secretary-Treasurer
WAS-ASPP

PEOPLE

ASPP member Jaleh Daie was elected to the executive board of the Council of Scientific Society Presidents (CSSP) of which ASPP is an affiliate. CSSP is a consortium of over 60 scientific societies with aggregate representation of more than 1.5 million scientists and science educators. Dr. Daie is currently serving as president of the Association for Women in Science.

DEADLINE FOR THE

MAY/JUNE ISSUE

OF ASPP NEWS

IS APRIL 26, 1996.

ASPP ANNOUNCES ITS WORLD WIDE WEB SITE

Job Ads, Annual Meeting News, and Important Links to Other Plant Biology Sites Are among Its Many Features

Some ASPP members may already know that an ASPP World Wide Web site has been under construction for the past several months. For those of you who were not aware of it, we are now prepared to unveil it and invite you all to check it out and let us know what you think. The URL is <http://aspp.org>.

As with most Web sites, ASPP's is evolving and growing every day, so it bears repeated visits. For example, you can find job ads there (see related story on this page); if you want to know which members of Congress sit on committees that control plant science funding, check out the public affairs link; annual meeting registration information will be there soon; information about ASPP's committees and activities is available; we anticipate putting the newsletter completely on line within the next few months.

You will also find a growing number of links to numerous other Web sites that provide information of value to plant biologists. In fact, we hope to make ASPP's Web site the central location to visit to be linked to virtually all electronic information of value to the plant science community.

We need your help to build our Web site. Please let us know of any and all links that would be of value—that includes lab homepages, department and university homepages, bulletin boards, newsgroups, education resources, and so on. The list is practically endless. Also, please let us know what kind of information and links would be of value to you.

Send your comments and suggestions to Susan Chambers at chambers@aspp.org.

Newsletter Job Ads to Go On Line Beginning in May 1996

ASPP is preparing to place on line all job ads received for publication in *ASPP News*. This electronic job bank will be freely accessible to all and will be updated weekly. We will also continue to print the ads in *ASPP News*. This service will begin with job ads submitted for publication in the May/June issue of *ASPP News*. In the meantime, the ads that appear in this issue of *ASPP News* were placed on line on the day the newsletter was mailed.

Please notify ASPP immediately if a job you have placed is filled so that the announcement can be deleted from both the electronic file and the newsletter.

Faculty and students who are seeking tenure-track or postdoctoral positions should get in the habit of checking ASPP's World Wide Web site on a regular basis for job leads. The WWW address is <http://aspp.org>. Then, scroll to Plant Physiology Resources and click on "Job Listings and Employment Resources." There you will find not only ASPP's job bank but also links to other biology and science job resources.

Anyone wanting more information about ASPP's electronic job bank can send an e-mail to Jody Carlson, jcarlson@aspp.org.

Remember to read ASPP's
Plant Gene Register
<http://www.ophelia.com/pgr/>





GET CAUGHT IN ASPP'S WEB!

**ASPP Announces Its
World Wide Web Site at
<http://aspp.org>**

Visit us often to find job news,
annual meeting news,
legislative updates and calls for action,
Section news, links to other plant science-
related information, and much, much more!

Let us know what you would like to see in
ASPP's Web site.

Send your comments and suggestions to
chambers@aspp.org.

ASPP Staff Welcomes Two and Bids Adieu to One

Taylor and Masciana Join Staff and Leader Leaves

The ASPP staff at headquarters in Rockville, Maryland, is undergoing several changes this spring. Dr. Crispin Taylor has been hired as news and reviews editor of *THE PLANT CELL*. Perry Masciana has been hired to fill the newly created position of information specialist. And Mark Leader has resigned as senior production editor of *Plant Physiology*.

Crispin Taylor joins *THE PLANT CELL* staff from his current position as a postdoctoral research associate in Ralph Quatrano's laboratory at the University of North Carolina, Chapel Hill, where he has worked on the effects of adhesion on the development of the brown alga *Fucus*. Taylor, a native of England, received his B.Sc. from the University of Surrey, Guildford, United Kingdom, in 1983. He spent one year at Michigan State University as an exchange student during his undergraduate years. Following his graduation, he returned to the United States and worked as a research technician for five years before entering graduate school in the MSU-DOE Plant Research Laboratory. He earned his Ph.D. in 1993, while working in the laboratory of Pamela Green. His doctoral dissertation was entitled "Components Involved in the Degrada-

tion of RNA in Plants."

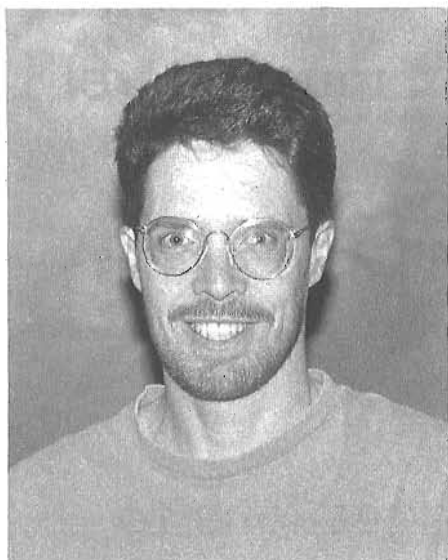
Taylor succeeds Rebecca Chasan as the news and reviews editor of *THE PLANT CELL*. In that position, he is responsible for the content of the journal's front section and for editing and overseeing production of its annual special issues. He will begin work immediately on managing the 1996 special issue of *THE PLANT CELL*, due out in October, that will deal with plant-microbe interactions.

Perry A. Masciana began working on March 11 as information specialist, filling the position created to manage the many internal information systems at headquarters and to oversee ASPP's rapidly expanding presence on the Internet and World Wide Web.

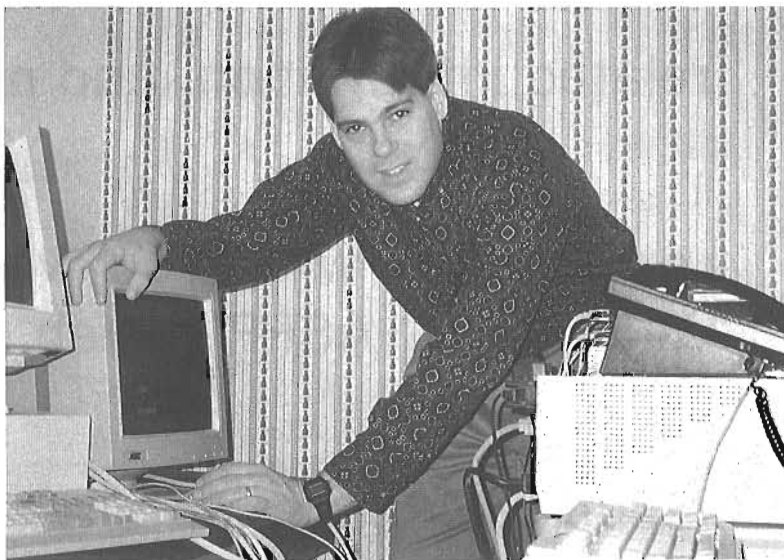
Masciana earned a B.S. in electrical engineering from George Washington University in 1983. Following graduation, he worked for Atlantic Research Corp. doing electromagnetic testing and computer evaluation for secure communications. He then went to CTA, Inc., and worked as an analyst on the first and second servicing missions of the Hubble Space Telescope. Among his responsibilities were testing and evaluating the network links among three of NASA's space centers, Kennedy Space Center at Cape

Canaveral, Johnson Space Center in Houston, and Goddard Space Center in suburban Washington, D.C. In that position, Masciana was also actively involved in designing and maintaining World Wide Web sites for NASA.

April 5 will be Mark Leader's last day of work at ASPP. He is leaving the editorial staff of *Plant Physiology* to become a managing editor for the American Diabetes Association. Leader joined the ASPP staff in April 1992 as the production editor of *Plant Physiology* and was promoted in 1994 to senior production editor. He worked closely with managing editor Deborah Weiner and editor Maarten Chrispeels to ensure a smooth transition when *Plant Physiology* went from the editorship of Martin Gibbs to that of Chrispeels, and he has been actively involved in the many changes in the journal since that time. One of his several responsibilities during the past couple of years has been to oversee the creation and production of the journal's color cover each month. In his new job with ADA, Leader will manage three peer-reviewed biomedical research journals, two monthly and one quarterly. A search for a successor to Mark Leader is currently underway.



Crispin Taylor will be the news and reviews editor of *THE PLANT CELL*.



Perry Masciana, information specialist, joined the ASPP staff on March 11.

PLANT BIOLOGY '96

1996 Annual Meeting of the
American Society of Plant Physiologists
(Joined by the Plant Physiology Section of the
Mexican Biochemical Society)

Saturday, July 27 - Wednesday, July 31
San Antonio, Texas



SYMPOSIA

News from the Frontiers of the Plant Cytoskeleton

Organizers: Susan Wick, University of Minnesota, and
Federico Sanchez, Instituto de Biotechnologia UNAM

Molecular Biology, Biochemistry, and Physiology of Plant P-450s

Organizer: Mary Schuler, University of Illinois

President's Symposium

Current Topics in Chloroplast Biology

Organizer: Bob Buchanan, University of California-Berkeley

Journal Editors' Symposium

Plant Microbe Interactions

Organizer: Brian Larkins, University of Arizona

Gibbs Medal Symposium

Plant Developmental Genetics

Organizer: Elliot Meyerowitz, California Institute of Technology

PLANT BIOLOGY '96

1996 Annual Meeting of the
American Society of Plant Physiologists
(Joined by the Plant Physiology Section of the
Mexican Biochemical Society)

Saturday, July 27 - Wednesday, July 31
San Antonio, Texas



MINISYMPOSIA

Calcium and Signal Transduction in Plants

Chair: Sharon R. Long,
Howard Hughes Medical Institute, Stanford University
Speakers: D. Ehrhardt, A. Harmon, S. Assmann

Molecular Chaperones

Chair: Elizabeth Vierling, University of Arizona
Speakers: E. Vierling, G. Lorimer, R. Boston

Plasmodesmata

Chair: Sondra G. Lazarowitz, University of Illinois
Speakers: S. Lazarowitz, B. L. Epel, B. Ding

Role of Stress-Induced Proteins

Chair: Jorge Nieto, National University of Mexico
Speakers: J. Nieto, T. J. Close, M. Thomashow

Molecular Biology of Plant Polyamines

Chair: Antonio F. Tiburcio, Universidad de Barcelona
Speakers: A.F. Tiburcio, R. Malmberg, R. Walden

Advanced Techniques in Plant Biology

Chair and presenters: TBA

Advances in the Study of Natural Products

Chair and presenters: TBA

Plant/Insect Interactions

Chair and presenters: TBA

Gatherings

The newsletter publishes dates, titles, locations, and contact names and addresses for meetings, courses, seminars, and the like that are of interest to ASPP members. Submit announcements via e-mail to sbraxton@aspp.org or mail to Sylvia J. Braxton, *ASPP NEWS*, 15501 Monona Drive, Rockville, MD 20855-2768 USA. **Faxed transmissions are not accepted.**

FUTURE ASPP ANNUAL MEETING SITES

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

1997: Vancouver, British Columbia, Canada
Saturday, August 2, through
Wednesday, August 6

1998: Madison, Wisconsin
Dates to be announced

1996

APRIL

April 9-13

**Third International Workshop:
Sulfur Metabolism in Higher Plants**
Newcastle upon Tyne, United Kingdom

Contact: Prof. John Cram, Department of Plant Biology, Ridley Building, University of Newcastle upon Tyne, Newcastle upon Tyne NE1 7RU, UK.

April 11-13

**New Biological Approaches to Understand
and Improve Winter Survival of Plants**
Århus, Denmark

Contact: Bjarni L. Gudleifsson, RALA Modruvellir, 601 Akureyri, Iceland; telephone: + 354-6-24477, fax + 354-6-27144.

April 12-14

Photosynthesis at the Frontiers of Biology
University of Illinois, Urbana-Champaign
Contact: Daniel Bush, 190 ERML, University of Illinois, Urbana, IL 61801; telephone 217-333-6109, e-mail d-bush1@uiuc.edu.

April 12-19

**9th International Congress on
Soilless Culture**

St. Helier, Jersey, Channel Islands
Write to Secretariat of ISOSC, P.O. Box 52, 6700 AB Wageningen, The Netherlands.

April 15-17

Starch: Structure and Function
Cambridge, UK

Contact: Mrs. M. A. Staff, Cavendish Laboratory, Madingley Road, Cambridge, CB3 0HE, United Kingdom; telephone 44-1223-3370007, fax 44-1223-337000.

April 17-20

**15th Annual Missouri Symposium
Protein Phosphorylation in Plants**
Columbia, Missouri

Submit abstracts or write for registration material to Missouri Symposium, 117 Schweitzer Hall, University of Missouri, Columbia, MO 65211; fax 314-882-5635.

April 20-22

**Workshop on Transgenic Plants:
Biology and Applications**
Tuskegee University, Tuskegee, Alabama

Contact: C.S. Prakash, School of Agriculture, Tuskegee University, Tuskegee, AL 36088-1641; telephone 334-727-8023, fax 334-727-8552, e-mail prakash@acd.tusk.edu.

April 30

**Frontiers in Plant Biology:
How Plants Communicate**
Plenary Symposium
National Academy of Sciences
Annual Meeting
Washington, DC

Washington area plant scientists are invited to attend. For more information contact:

Hans Kende, MSU DOE Plant Research Laboratory, Michigan State University, East Lansing, MI 48824-1312; telephone 517-353-7865, fax 517-353-9168, e-mail hkende@msu.edu.

MAY

May 3-4

**Northeast Section of
American Society of Plant Physiologists
Annual Meeting**
Plattsburgh, New York

Contact: Peter Conrad or Janice Marchut, telephone 518-564-5271, e-mail conradpl@splava.cc.plattsburgh.edu.

May 5-10

**Model Program in Environmental and
Agricultural Ethics**

Michigan State University, East Lansing

The deadline for applications is March 1, 1996. Contact: Professor Fred Gifford, Philosophy Department, 503 S. Kedzie Hall, Michigan State University, East Lansing, MI 48824; telephone 517-355-4490, e-mail gifford@pilot.msu.edu.

May 12-17

**VIII Congress
International Society of Citriculture**
Sun City Resort, South Africa

Contact: Congress Secretariat, Institute for Tropical and Subtropical Crops, Private Bag X 11208, Nelspruit 1200, South Africa; telephone 27-1311-52071, fax 27-1311-23854, e-mail supervisor@itsg.arc.agric.sa.

May 21-28

Microinjection Techniques in Cell Biology
Woods Hole, Massachusetts

Short Course. For more information contact: Carol Hamel, Admissions Coordinator, Marine Biological Laboratory, 7 MBL Street, Woods Hole, MA 02543-1015; telephone 508-289-7401, World Wide Web <http://www.mbl.edu>.

May 27-June 1

**Seventh International Conference on the
Cell and Molecular Biology of
Chlamydomonas**
Regensburg, Germany

Send request for registration and abstract materials to Dr. Rüdiger Schmitt, Institut für

Biochemie, Genetik und Mikrobiologie,
93040 Regensburg, Germany; telephone 00
49 943-941-3162, fax 00 49 943-941-3163; or
send e-mail to chlamy@acpub.duke.edu.

May 28-June 1

Arc et Senans Plant Workshop: Roots Arc et Senans, France

Contact: Dr. Louise Dewhurst, IFAB
Communications, Department of Biology,
University of York, PO Box 373, York YO1
5YW, United Kingdom; fax 44 1904 433029,
e-mail biocomms@york.ac.uk.

JUNE

June 1-5

Noble Foundation Symposium Biochemical and Metabolic Aspects of 3- Ketoacyl Synthases

Humacao, Puerto Rico

For information and applications, contact
Jan Jaworski, e-mail jaworsjg@muohio.edu
or fax 415-325-6857 or Dusty Post-
Beittenmiller, e-mail dpost@noble.org or fax
405-221-7380.

June 2-5

The Monroe Wall Symposium on Natural Products: Harnessing Biodiversity for Therapeutic Drugs and Foods

New Brunswick, New Jersey

Contact: Keith Wilson, Office of Continuing
Professional Education, Rutgers University,
Cook College, P.O. Box 231, New
Brunswick, NJ 08903-0231; telephone 908-
932-9271, fax 908-932-1187.

June 2-7

5th International Symposium on Grapevine Physiology Hebrew University of Jerusalem Jerusalem, Israel

Contact: Ben Ami Bravdo, Rehovot, POB12,
Israel 76100, e-mail bravdo @agri.huji.ac.il.

June 9-13

NATO Advanced Research Workshop Biology and Biotechnology of the Plant Hormone Ethylene

Chania, Crete, Greece

To be added to the symposium mailing list,
send your name and address to: Dr.
Angelos K. Kanellis, National Agricultural
Research Foundation, Institute of Viticulture
and Vegetable Crops, PO Box 1841, 711 10
Heraklion, Crete, Greece; telephone 30 81
245851 or 245873, fax 30 81 245873 or
245858, e-mail kanellis@nafari.imbb.forth.gr.

June 10-14

Course: Separation and Characterization of Glycoprotein Oligosaccharides Complex Carbohydrate Research Center University of Georgia, Athens

Application deadline May 24, 1996. Contact:
Roberta K. Merkle, Complex Carbohydrate
Research Center, The University of Georgia,
220 Riverbend Road, Athens, GA, 30602-
4712.

June 15-20

24th Annual Meeting of the American Society for Photobiology CNN Center, Atlanta, Georgia

Contact: Dr. Sherwood Reichard, American
Society for Photobiology, BioTech Park,
Suite 9, 1021 15th Street, Augusta, GA
30901; telephone 706-722-7511, fax 706-722-
7515, e-mail maps@csra.net.

June 16-21

Third International Symposium on in Vitro Culture and Horticultural Breeding Jerusalem, Israel

Contact: Third International Symposium on
in Vitro Culture and Horticultural Breeding,
P.O. Box 50006, Tel-Aviv 6500, Israel.

June 16-21

Gordon Conference Mitochondria and Chloroplasts Plymouth State College Plymouth, New Hampshire

Organizers: Kathleen Newton, chair,
Gottfried Schatz, vice chair. Contact: Gordon
Research Conferences, University of Rhode
Island, P.O. Box 984, West Kingston, RI
02892-0984; telephone 401-783-7644, fax 401-
783-4011, e-mail grc@grcmail.grc.uri.edu.

June 17-21

Course: Structural Analysis of Oligosaccharides Complex Carbohydrate Research Center University of Georgia, Athens

Application deadline May 24, 1996. Contact:
Roberta K. Merkle, Complex Carbohydrate
Research Center, The University of Georgia,
220 Riverbend Road, Athens, GA, 30602-
4712.

June 22-26

1996 World Congress on in Vitro Biology Biotechnology: From Fundamental Concepts to Reality San Francisco, California

Contact: Tiffany McMillan, telephone 410-
992-0946, fax 410-992-0949, e-mail
sivbiology@aol.com, World Wide Web http:
//pages.prodigy.com/Shillito/congress.htm.

June 23-26

Second International Symposium on the Biology of Root Formation and Development Jerusalem, Israel

Contact: Second International Symposium of
the Biology of Root Formation and Develop-
ment, P.O. Box 50006, Tel-Aviv 61500, Israel.

June 23-28

Seventh International Conference on Arabidopsis Research University of East Anglia Norwich, United Kingdom

Queries may be addressed to:
arabidopsis@bbsrc.ac.uk.

June 25-28

The Second International Weed Control Congress Copenhagen, Denmark

Contact: International Conference Services,
P.O. Box 41, Strandvejen 171, DK-2900
Hellerup, Denmark, telephone 45 39 61 21
95, fax 45 39 61 20 68; or Jens C. Streibig,
Department of Agricultural Sciences, Weed
Science, The Royal Veterinary and Agricul-
tural University, Thorvaldsensvej 40, DK-
1871 Frederiksberg C, Denmark, telephone
45 35 28 34 57, fax 45 35 28 34 68, e-mail
jens.c.streibig@agsci.kvl.dk.

June 30-July 3

International Conference on Isozymes and Molecular Markers in Plants: Basic and Applied Aspects

Villa Olmo, Como, Italy

Contact: Prof. Mirella Sari Gorla, Dr. Carla
Frova Department of Genetics and Microbi-
ology, University of Milano Via Celoria 26,
20133 Milano, Italy; telephone 39 2
26605201/204, fax 39 2 2664551, e-mail
sari@imiucca.csi.unimi.it.

JULY

July 7-12

12th International Symposium on Plant Lipids Toronto, Canada

Contact: John P. Williams, Department of
Botany, University of Toronto, 25 Willcocks
St., Toronto, Ontario, Canada M5S 3B2;
telephone 416-978-3540, fax 416-978-5878, e-
mail lipids96@botany.utoronto.ca.

July 7-August 3

Summer Course: Mechanisms of Microbial Adaptation Ohio State University, Columbus

Sponsored by NSF and DOE
Contact: Dr. Charles J. Daniels, Department
of Microbiology, The Ohio State University,
484 West 12 Ave., Columbus, OH 43210;

telephone 614-292-2301, fax 614-292-8120, e-mail daniels.7@osu.edu. Application Deadline: March 1, 1996.

July 12-14

Emerging Model Legume Systems: Tools and Recent Advances Knoxville, Tennessee

To indicate interest and receive registration information, please contact D. Cook (drc1653@acs.tamu.edu, or Department of Plant Pathology and Microbiology, Texas A&M University, College Station, TX 77843-2132) or K. VandenBosch (kate@bio.tamu.edu, or Department of Biology, Texas A&M University, College Station, TX 77843-3258).

July 12-25

Gordon Conference Plant Biological Regulatory Mechanisms New Hampton School, New Hampton New Hampshire

Contact: Dr. Athanasios Theologis, Plant Gene Expression Center, 800 Buchanan Street, Albany, CA 94710; telephone 510-559-5911, fax 510-559-5678, e-mail theo@mendel.berkeley.edu.

July 14-17

4th IUBMB Conference The Life and Death of the Cell Edinburgh, Scotland

Contact: The Meetings Office, The Biochemical Society, 59 Portland Place, London W1N 3AJ, United Kingdom; telephone 44-171-580-5530, fax 44-171-637-7626, e-mail meetings@biochemsoc.org.uk.

July 14-18

5th Symposium of the International Society of Root Research Clemson University, South Carolina

For a copy of the final announcement and call for papers please contact: Dr. James E. Box, Jr., USDA-ARS, P.O. Box 555, Watkinsville, GA 30677, U.S.A.; e-mail rootconf@uga.cc.uga.edu, telephone 706-769-5631, fax 706-769-8962.

July 14-19

8th International Symposium on Molecular Plant-Microbe Interactions and 7th Annual Gatlinburg Symposium University of Tennessee, Knoxville

Contact: Dr. Gary Stacey, Director, Center for Legume Research M409 Walters Life Science Bldg, The University of Tennessee Knoxville, TN 37996-0845 USA; fax 615-974-4007; e-mail: gstacey@utkvtx.utk.edu.

July 14-19

Gordon Conference Gravitational Effects on Living Systems Colby-Sawyer College New London, New Hampshire

Organizers: Manning Correia, chair, Michael Evans, vice chair. Contact: Alan B. Bennett, Mann Laboratory, University of California, Davis, CA 95616; fax 916-752-4554, e-mail abbenett@ucdavis.edu.

July 14-19

Gordon Conference Plant Senescence and Programmed Cell Death Plymouth State College Plymouth, New Hampshire

Organizers: Alan B. Bennett, chair, Anthony Bleeker, vice chair. Contact: Gordon Research Conferences, University of Rhode Island, P.O. Box 984, West Kingston, RI 02892-0984; telephone 401-783-7644, fax 401-783-4011, e-mail grc@grcmail.grc.uri.edu.

July 21-24

Third International Fructan Symposium Logan, Utah

Contact: N. Jerry Chatterton, USDA/ARS, Forage and Range Research, Utah State University, Logan, Utah 84322-6300, USA; telephone 801-797-2249, fax 801-797-3075, e-mail njchatt@cc.usu.edu.

July 21-25

Society for Experimental Biology Symposium Control of Plant Development: Genes and Signals University College, Dublin, Ireland

To receive the Second Announcement and Call for Abstracts, write to: The Society for Experimental Biology, Burlington House, London W1V 0LQ, U.K.

July 21-25

Gordon Conference Plant Molecular Biology New Hampton School New Hampton, New Hampshire

Organizers: Athanasios Theologis, chair, Pamela Green, vice chair. Contact: Gordon Research Conferences, University of Rhode Island, P.O. Box 984, West Kingston, RI 02892-0984; telephone 401-783-7644, fax 401-783-4011, e-mail grc@grcmail.grc.uri.edu.

July 27-31

Plant Biology '96 Annual Meeting American Society of Plant Physiologists San Antonio, Texas

Contact: Sharon Kelly; e-mail skelly@aspp.org.

AUGUST

August 4-9

Postharvest '96: Fourth Yearly International Conference on Postharvest Science Taupo, New Zealand

For more information and registration materials contact: Dr. Ian Ferguson, HortResearch, Private Bag 92 169, Auckland, NZ; telephone 00 64 9 849 3660, fax 00 64 9 815 4202, e-mail iferguson@hort.cri.nz.

August 4-9

Gordon Conference Photosynthesis: Biochemical Aspects New Hampton School New Hampton, New Hampshire

Organizers: Charles F. Yocum, chair, Melvin P. Okamura, vice chair. Contact: Gordon Research Conferences, University of Rhode Island, P.O. Box 984, West Kingston, RI 02892-0984; telephone 401-783-7644, fax 401-783-4011, e-mail grc@grcmail.grc.uri.edu.

August 5-8

5th International Plant Cold Hardiness Seminar

Oregon State University, Corvallis
Contact: Tony Chen, Department of Horticulture, Oregon State University, Corvallis, Oregon 97331; telephone 503-737-5444, fax 503-737-3479, e-mail chent@bcc.orst.edu; or contact Paul Li, Department of Horticultural Science, University of Minnesota, St. Paul, MN 55108; telephone 612-624-1757, fax 612-624-4941, e-mail lixxx008@maroon.tc.umn.edu.

August 11-16

Gordon Research Conference Cellular Basis of Adaptation to Salt and Water Stress in Plants

Tilton School, Tilton, New Hampshire
Contact: Andrew D. Hanson, Horticultural Sciences Department, University of Florida, Gainesville, FL 32611-0690; telephone 352 392-1928, ext. 334; fax 352 392-6479; e-mail adha@gnv.ifas.ufl.edu.

August 18-23

Gordon Research Conference CO₂ Fixation and Metabolism in Green Plants

Tilton School, Tilton, New Hampshire
Contact: Steven C. Huber, USDA/ARS Plant Science Research, North Carolina State University, Raleigh, North Carolina 27695-7631 USA; fax 919-856-4598; e-mail shuber@cropserv1.cropsci.ncsu.edu.

August 18-23

Gordon Conference

Photosynthetic CO₂ Fixation and Metabolism in Green Plants

Tilton School, Tilton, New Hampshire

Organizers: Steven C. Huber, Chair, Hans Bohnert, vice chair. Contact: Gordon Research Conferences, University of Rhode Island, P.O. Box 984, West Kingston, RI 02892-0984; telephone 401-783-7644, fax 401-783-4011, e-mail grc@grcmail.grc.uri.edu.

August 19-23

**Course: Mass Spectrometry and MS/MS Analysis of Glycoconjugates
Complex Carbohydrate Research Center
University of Georgia, Athens**

Application deadline May 24, 1996. Contact: Roberta K. Merkle, Complex Carbohydrate Research Center, The University of Georgia, 220 Riverbend Road, Athens, GA, 30602-4712.

SEPTEMBER

September 16-18

**Engineering Crops for Industrial End Uses
Joint Meeting of the Biochemical Society
and IACR-Long Ashton Research Station
Long Ashton, Bristol, United Kingdom**

Contact: Mr. H. M. Anderson, IACR-Long Ashton Research Station, Department of Agricultural Sciences, University of Bristol, Long Ashton, Bristol, BS18 9AF, UK; telephone 44 1275 392181, fax 44 1275 394007, e-mail christine.cooke@bbsrc.ac.uk.

September 22-28

**NATO Advanced Research Workshop
Regulation of Enzymatic Systems
Detoxifying Xenobiotics in Plants
Kallithea, Chalkidiki, Greece**

Contact the workshop director: Prof. Kriton K. Hatzios, Department of Plant Pathology, Physiology and Weed Science, Virginia Polytechnic Institute and State University, Blacksburg, VA 24061-0330; telephone 540-231-5808, fax 540-231-5755, e-mail hatzios@vt.edu.

September 27-29

Robertson Symposium:

**C4 Photosynthesis 30 years On
Australian National University, Canberra**

For preliminary circular, contact: Bob Furbank, CSIRO Division of Plant Industry, GPO Box 1600 Canberra, ACT 2601 Australia, e-mail furbank@pican.pi.csiro.au; Susanne von Caemmerer, RSBS, ANU, GPO Box 475, Canberra, ACT 2601 Australia, e-mail susanne@rsbs-central.anu.edu.au.

1997

JANUARY

January 20-26, 1997

**Keystone Symposia Conference
Evolution of Plant Development
Taos, New Mexico**

Organizers: Susan R. Wessler, Michael Freeling, Elliot Meyerowitz. Contact: Keystone Symposia, Drawer 1630, Silverthorne, CO 80498; telephone 800-235-0685 or 970-262-1230, fax 970-262-1525, e-mail keystone@symposia.com.

MARCH

March 21-26, 1997

**Information Processing Systems in Plants:
Their Evolution and Function
University of California, Davis**

Contact: Dr. Bill Lucas, Section of Plant Biology, University of California, Davis, CA 95616 USA; fax 916-7525410, e-mail wjlucas@ucdavis.edu.

APRIL

April 6-11, 1997

**Keystone Conference
Metabolic Engineering in Transgenic Plants
Copper Mountain, Colorado**

Organizers: Richard A. Dixon, Charles J. Arntzen. Contact: Keystone Symposia, Drawer 1630, Silverthorne, CO 80498; telephone 800-235-0685 or 970-262-1230, fax 970-262-1525; e-mail keystone@symposia.com.

April 14-19, 1997

**9th International Congress on Isozymes,
Genes, and Gene Families
San Antonio, Texas**

Contact: Ms. Daphne Wright, Congress Liaison, Southwest Foundation for Biomedical Research, P.O. Box 28147, San Antonio, TX 78228-0147; fax 210-670-3337, e-mail isozyme@darwin.sfbr.org.

Sucrose Metabolism, Biochemistry, Physiology and Molecular Biology

Edited by
H. G. Pontis, G. L. Salerno, E. J. Echeverria

Proceedings
International Symposium on Sucrose Metabolism
Mar del Plata, Argentina
May 8-13, 1995

Current Topics in Plant Physiology: An American Society of Plant Physiologists Series, Volume 14

The Early Days of the Instituto de Investigaciones Bioquimicas,
Fundacion Campomar, A. C. Paladini

Carlos Cardini: A Whole Life Devoted to Research and Teaching,
J. S. Tandecarz

Regulation of Sucrose-Phosphate Synthase by Reversible Protein
Phosphorylation: Manipulation of Activation and Inactivation in
Vivo, S. C. Huber, M. Bachmann, R. W. McMichael, Jr., J. L. Huber

The Regulation of Sucrose Synthesis in Leaves and Tubers of Potato
Plants, P. Geigenberger, K.-P. Krause, L. M. Hill, R. Reimholz,
E. MacRae, P. Quick, U. Sonnewald, M. Stitt

The Structure of Sucrose-Phosphate Synthase, M. E. Salvucci,
F. J. van de Loo, R. R. Klein

Biosynthesis of Sucrose in Lower Organisms, G. L. Salerno,
A. C. Porchia, N. Sanchez

Metabolic Roles of Sucrose Synthase: Example of Rice Isozymes
Encoded by Three Isogenes, J.-C. Su

Can Sucrose Cleavage Enzymes Serve as Markers for Sink Strength
and Is Sucrose a Signal Molecule during Plant Sink Development?,
C. C. Black, T. Loboda, J.-Q. Chen, S.-J. S. Sung

The Plant Invertases, A. R. Sampietro

3-Phosphoglyceric Acid Activation of Maize Endosperm ADP-Glc
Pyrophosphorylase following Proteolytic Cleavage of the SH2 or
BT2 Subunits, L. C. Hannah, J. Baier, J. Carren, M. Giroux

On the Role of Sucrose Synthase in Cellulose and Callose
Biosynthesis in Plants, P. S. Chourey, M. E. Miller

Fructan Accumulation in Transgenic Plants: Effect on Growth,
Carbohydrate Partitioning and Stress Resistance, E. A. H. Pilon-Smits,
M. J. M. Ebskamp, P. J. Weisbeek, S. C. M. Smeekeens

Transgenic Plants as a Tool to Analyze Carbohydrate Metabolism,
J. Kossmann, B.-M. Rober, J. Riesmeier, W.-B. Frommer, U. Sonnewald,
L. Willmitzer

On the Initiation of Starch Synthesis, J. S. Tandecarz, F. J. Ardila,
S. N. Bocca, S. Moreno, A. Rothschild

Sucrose-Starch Transition in Plant Cells, T. Akazawa, C.-H. Lin,
J.-H. Lin, N. Smith

Can We Assign Specific Roles for the Starch Biosynthetic Enzymes
with Respect to Starch Biosynthesis?, J. Preiss, H.-P. Guan, Y. Fu,
M. A. Ballicora, M. N. Sivak

Where Do Plants Make ADP-Glc?, T. ap Rees

Role of the Vacuole in Raffinose Oligosaccharide Storage, F. Keller

Sucrose and the Regulation of Fructan Metabolism in Leaves of
Temperate Gramineae, C. J. Pollock, A. L. Winters, J. Gallagher,
A. J. Cairns

Fructan—an Extension of Sucrose by Sucrose, A. Wiemken,
N. Sprenger, T. Boller

A Discussion on the Present Model of Fructan Biosynthesis,
H. G. Pontis

Sucrose Transporters in Assimilate Partitioning and Plant Growth,
D. R. Bush, T.-J. Chiou

Phloem Unloading in Developing Wheat Grains, D. B. Fisher

Symplastic Phloem Loading by Polymer Trapping, E. Haritatos,
R. Turgeon

A Preliminary Turnover Rate for Sucrose/H⁺-Antiport on the
Tonoplast of Red Beet Storage Tissue, H. P. Getz, M. Klein

In Vitro Sucrose Mobilization from the Vacuole, E. Echeverria

Carbohydrate Metabolism in the Desiccation-Tolerant Plant
Cratogeomys plantagineum Hochst, G. Schwall, R. Elster, J. Ingram,
G. Bernacchia, G. Bianchi, L. Gallagher, F. Salamini, D. Bartels

A Cell Biochemical Study on Sugar-Controlled α -Amylase Secretion
in Rice, T. Mitsui, K. Yotsushima, Y. Nabekura

Sucrose Provides a Long Distance Signal for Coarse Control of Genes
Affecting Its Metabolism, K. E. Koch, J. Xu, E. R. Duke, D. R. McCarty,
C.-X. Yuan, B.-C. Tan, W. T. Avigne

What Next?, T. ap Rees

Sucrose Metabolism, Biochemistry, Physiology and Molecular Biology

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Please print or type your placement information on this form (curriculum vitae will not be accepted) and send it to:
Estella Coley, ASPP headquarters, 15501 Monona Drive, Rockville, MD 20855-2768

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ASPP Job Placement Service

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

ASPP headquarters in Rockville, MD, operates a placement service in which are kept active two files of résumés of individuals who are seeking employment. Employers are urged to survey the résumé files for those seeking permanent positions and those seeking postdoctoral or similar positions. The files cost \$25 each and may be ordered from Ms. Estella Coley, ASPP Placement Service, 15501 Monona Drive, Rockville, MD 20855-2768. Those seeking employment should complete the Placement Service Form on the facing page to be included in the service.

II. Placing a Position Ad in ASPP NEWS

- **POSTDOCTORAL, GRADUATE ASSISTANTSHIP, AND TECHNICIAN POSITIONS** (academic and government installations): Limited to 100 words. Ads run two times: the first time entire; the second time, only location, contact name and address, and reference to original posting.
- **TENURE-TRACK POSITIONS** (academic and government installations): Limited to 200 words; \$150 to run one time, \$250 to run two times.
- **ALL PRIVATE COMPANY POSITIONS**: Limited to 200 words; \$150 to run one time; \$250 to run two times.
- **GRADUATE FELLOWSHIP ANNOUNCEMENTS**: Announcements of programs and fellowships or traineeships for students seeking advanced degrees will be grouped at the end of the job placement section at no charge. They will run one time full length with no restrictions on length; the second time, they will include location, contact name and address, and reference to original posting.

Submit ads by e-mail to sbraxton@aspp.org. Alternatively, mail your copy to Sylvia J. Braxton, ASPP NEWS, 15501 Monona Drive, Rockville, MD 20855-2768 USA. **FAXED ADS ARE NOT ACCEPTED.** If you submit a chargeable ad by e-mail, be certain to include complete billing information. If you mail a chargeable ad, include a purchase order or a credit card number, expiration date, and signature.

Postdoctoral Position USDA, ARS, Houston, Texas (New)

A postdoctoral position is available immediately to study the whole-plant regulation of calcium nutrition in *Phaseolus*. Research will involve membrane transport investigations using intact roots and membrane vesicles, xylem transport analysis, and assessment of shoot-root interactions. The GS11/12 federal position is funded for two years; certain citizenship restrictions apply. A recent Ph.D. in plant physiology or related field with a demonstrated ability to publish is required. Send curriculum vitae, selected papers, and the names of three references to: Dr. Michael A. Grusak, USDA/ARS, CNRC, 1100 Bates Street, Houston, TX 77030; e-mail mgrusak@bcm.tmc.edu. USDA/ARS is an equal opportunity employer.

Postdoctoral Position University of Melbourne, Australia (New)

A postdoctoral position in hormone physiology is available in a research group studying the vascular cambium of eucalypts and xylem fiber development during wood formation. The position is funded for three years by the Cooperative Research Centre for Hardwood Fibre and Paper Science. The appointee will continue an established research program on the physiological role

of plant growth regulators/hormones, particularly gibberellins, in cambial activity, including molecular-biological approaches to hormone manipulation. For further information and a detailed position description, contact: Dr. Steve Read, School of Forestry, University of Melbourne, Creswick, Victoria 3363, Australia; fax 61 53 214 194, e-mail stephen_read@muwayf.unimelb.edu.au.

Postdoctoral Position University of Nebraska, Lincoln (New)

A position is available immediately to introduce and test various genes potentially useful to ameliorate effects of environmental stress or disease in plants. This is an interdepartmental collaborative project funded by the University Biotechnology Center. A Ph.D. degree in plant biology with training and experience in producing gene constructs and transforming plants is required. Send curriculum vitae and request three letters of reference be sent to: Dr. Paul Staswick, Department of Agronomy, University of Nebraska, P.O. Box 830915, Lincoln, NE 68583-0915; telephone 402-472-5624, e-mail pstaswick@crcvms.unl.edu.

Postdoctoral Research Positions University of Minnesota, St. Paul (New)

The Department of Horticultural Science at the University of Minnesota receives and evaluates applications from candidates for temporary part- and full-time research positions continuously. Positions become available throughout the year, and are not continually available. Open temporary positions may be obtainable by persons holding an earned doctorate degree with applicable research training and/or experience; degree must be in hand at time of appointment. Submit a letter of interest and resume to Dr. Gary M. Gardner, Head, Department of Horticultural Science, University of Minnesota, 305 Alderman Hall, St. Paul, MN 55108. Filing deadline is December 31, 1996. The University of Minnesota is an equal opportunity educator and employer.

Postdoctoral Position University of California, Riverside (New)

Applications are being accepted through May 1, 1996, or until a suitable candidate is found to isolate, purify, and characterize an unidentified enzyme involved in pectin metabolism in the albedo of citrus fruit and a factor in the rind disorder, creasing. Experience in protein biochemistry is essential; experience in cell wall carbohy-

drate metabolism is desirable. To apply, send a curriculum vitae, an indication of research experience and interests, and three letters of reference to: Carol J. Lovatt, Department of Botany and Plant Sciences, University of California, Riverside, CA 92521-0124. The University is an equal opportunity employer.

Postdoctoral Position
Pennsylvania State University
University Park
(New)

A postdoctoral position will be available from April 1, 1996, to investigate signal transduction during the gravitropic response of *Arabidopsis thaliana*. The research will use microscopy and cell biological techniques to help define the role of regulators such as Ca²⁺, pH, and auxin. A Ph.D. is required and experience in fluorescence microscopy and/or gravitropism is desirable. Send curriculum vitae and names and addresses of three references to: Dr. Simon Gilroy, Biology Department, Penn State University, 208 Mueller lab, University Park, PA 16802; e-mail: sxg12@email.psu.edu. Laboratory information is posted at <http://www.bio.psu.edu/faculty/gilroy/lab.html>.

Postdoctoral Position
USDA, University of Illinois, Urbana
(New)

One USDA-postdoctoral position is available on an Illinois Soybean Program Operating Board-funded project to transform the soybean chloroplast with a foreign Rubisco large subunit gene. The project will involve the extension of methods developed for chloroplast transformation in tobacco to soybean in the laboratory of Dr. A. R. Portis and in a collaboration with Dr. Jack Widholm, Department of Crop Sciences, University of Illinois. Experience in transformation and recombinant DNA technology is essential. The position is open to U.S. citizens, and those of countries with military treaties with the U.S. and may be supported up to three years. Send a curriculum vitae, three references, and a description of previous research experience relevant to this project to Dr. A. R. Portis, USDA Photosynthesis Research Unit, 190 ERML, 1201 W. Gregory, Urbana IL 61801-3838; fax 217-244-4419, e-mail arportis@uiuc.edu. AA/EOE employer.

Postdoctoral Position
Boyce Thompson Institute at
Cornell University
Ithaca, New York
(New)

Our laboratory is interested in the biochemical mechanisms that plants use for ultraviolet-B perception and protection. In published work we have used *Arabidopsis thaliana* mutants to examine the roles of aromatic secondary metabolites as sunscreens (Li et al. Plant Cell 5:171-179; Landry et al. Plant Physiol. 109: 1159-1166). This analysis was recently extended to identify mutants defective in other UV-B protective mechanisms by screening for sensitivity to chronic UV-B radiation. One such mutant is defective in light repair of cyclobutyl pyrimidine dimers and is presumably a CPD photolyase mutant. We are also screening for UV-B signal transduction mutant. A postdoctoral associate is sought to continue work on characterizing these mutants and cloning the affected genes. Experience in protein biochemistry or genetics is desirable. Please send a curriculum vitae, list of publications, and four letters of reference to: Robert L. Last, Boyce Thompson Institute for Plant Research, Cornell University, Tower Road, Ithaca, NY 14853-1801; fax: 607-254-1242. The Boyce Thompson Institute is an equal opportunity/affirmative action employer; women and minority candidates are strongly encouraged to apply.

Postdoctoral Position
University of Delaware, Lewes
(New)

Openings are available to work on the physiology, biochemistry, genetics, and molecular biology of maize reproduction with emphasis on limited supplies of water. See Crop Sci. 35:1390 [1995] for background. Send curriculum vitae, list of three references, and letter explaining interest and background to Dr. J. S. Boyer, University of Delaware, 700 Pilottown Road, Lewes, DE 19958.

Postdoctoral Research Position
Samuel Roberts Noble Foundation
Ardmore, Oklahoma
(New)

A postdoctoral position is available immediately to study phosphate transport in VA mycorrhizae. Studies will include analysis of the expression and regulation of a phosphate transporter from the mycorrhizal fungus *Glomus versiforme* during the symbiotic association with *Medicago truncatula* (Nature, 378, 626-629, 1995). The project is supported by the Noble Foundation, and the position is initially available for two years with the possibility of renewal

for an additional year. Applicants should have a strong background in molecular biology (plant or fungal); experience in plant biochemistry and/or physiology is preferred. To apply, send a letter outlining research interests, a curriculum vitae, and names of three references to: Dr. Maria J. Harrison, Plant Biology Division, Samuel Roberts Noble Foundation, 2510 Sam Noble Parkway, Ardmore, OK 73401; telephone 405-223-5810, fax 405-221-7380, e-mail mjharrison@noble.org.

Postdoctoral Position
Washington State University, Pullman
(New)

A postdoctoral position will be available, starting May 1, to study the control of phloem unloading in wheat plants (see Plant Physiol 104: 7 and 17 [1994] and Plant Physiol 109: 579 and 587 [1995]). Applicants should be familiar with plant water relations and should feel comfortable working under a dissecting microscope. Send a curriculum vitae, statement of research interests, and three letters of recommendation to: Donald B. Fisher, Department of Botany, Washington State University, Pullman, WA 99164-4238; telephone 509-335-2254, fax 509-335-3517, e-mail dbfisher@wsu.edu. Washington State University is an affirmative action, equal opportunity employer.

Postdoctoral Research Associate
Washington State University, Wenatchee
(New)

A postdoctoral position is available July 1, 1995, at WSU Tree Fruit Research Center in Wenatchee to study factors causing sunburn in apples. Experience in plant physiology/biochemistry required; experience with trees and computers desired. Salary commensurate with experience (\$29,000-\$30,000 plus benefits). Submit curriculum vitae; transcripts; and names, addresses, and telephone numbers of at least three references to: Dr. L. E. Schrader, WSU-TFREC, 1100 N. Western Ave., Wenatchee, WA 98801-1230; telephone 509-663-8181 ext.265, fax 509-662-8714, e-mail larry_schrader@tfrec.wsu.edu. Application screening starts May 15. EOE/AA/ADA.

Postdoctoral Position
University of Illinois, Urbana
(New)

A two-year postdoctoral position is available to investigate expression of the flavonoid pathway in soybean and the molecular nature of mutations that affect seed and flower color variegation. Experience in molecular biology and genetics desired. Excellent laboratory facilities and equipment

available. Initial appointment is for one year with renewal for a second year pending satisfactory progress. By May 1, send a curriculum vitae including a cover letter outlining your research background and interests, a copy of graduate school transcripts, and three reference letters to: Dr. Lila Vodkin, Department of Crop Sciences, University of Illinois, Urbana, IL 61801; telephone 217-244-6147, fax 217-333-4777, e-mail l-vodkin@uiuc.edu. The University is an affirmative action/equal opportunity employer.

Postdoctoral Position
CEA Cadarache, France
(New)

A postdoctoral position is available to study biochemical properties (polypeptide composition, redox centers) and enzymology (substrate specificity, effect of inhibitors) of a thylakoid protein complex involved in a respiratory activity located within chloroplasts (PNAS 88, 4791-4795; FEBS Lett. 378, 277-280). Applicants should have research experience in enzymology and protein purification. Some experience in EPR will be appreciated. Send curriculum vitae containing the names and addresses of three references to: Dr. Gilles Peltier, Département d'Ecophysiologie Vegetale et de Microbiologie, CEA Cadarache Bat. 161, 13108 Saint-Paul-lez-Durance, France; telephone 33 42 25 76 51, fax 33 42 25 62 65, e-mail peltier@dsqcad.cea.fr.

Postdoctoral Positions
University of Illinois, Urbana
(New)

Four postdoctoral positions are available in the Department of Crop Sciences at the University of Illinois. Successful applicants will participate in a multidisciplinary project to develop and exploit efficient and reliable methods to transform soybean. Candidates must have a Ph.D. degree or equivalent and demonstrated experience in one or more of the following areas: plant molecular biology; plant tissue culture and regeneration; plant transformation; microbial molecular genetics. The successful candidates will be based, depending on expertise, in the laboratories of Drs. Andrew Bent, Stephen Farrand, Lila Vodkin, or Jack Widholm. These are full-time academic, non-tenure track positions. Appointments are for one-year periods with renewals depending upon satisfactory progress and continued availability of funds. Salaries will be commensurate with experience. Send a curriculum vitae, a copy of graduate school transcripts, and three letters of reference to: Ms. Deborah Lee, Assistant to the Head, Department of Crop Sciences, University of Illinois at Urbana-

Champaign, AW101 Turner Hall, 1102 South Goodwin Avenue, Urbana, IL 61801. Applications will be accepted until May 1, 1996, or until the positions are filled. The University of Illinois is an affirmative action, equal opportunity employer. Women and minorities are encouraged to apply.

Postdoctoral Positions/Senior Level Technicians
University of Nebraska, Lincoln
(New)

A new interdepartmental program in plant genetic engineering has been established. Focus areas include: (1) development of novel uses for viruses including the isolation of plant promoters from algal viruses and construction of virus vectors for assaying transient gene expression; (2) establishment of reliable wheat and soybean transformation systems; (3) application of these tools to engineer plants for resistance to disease, resistance to stress, and for value-added products. Faculty members include: Stephen Baenziger and Paul Staswick from the Department of Agronomy; Paul Blum, Tom Elthon, and Jack Morris from the School of Biological Sciences; Roy French, Amit Mitra, and Jim Van Etten from the Department of Plant Pathology. It is anticipated that several postdoctoral and senior level technician positions will be available with this program. Inquiries and applications about these positions can be made to Dr. Donald Weeks, Center for Biotechnology, N300 Beadle Center, University of Nebraska-Lincoln, Lincoln, NE 68588-0665.

Postdoctoral Research Associate
Pennsylvania State University
University Park
(New)

Immediate opening for a research associate with experience in plant transformation to develop a transformation system for cacao. Person will be responsible together with the director of the Penn State Program in the Molecular Biology of Cacao for planning and carrying out all phases of a research program, for the supervision of a graduate student and a technician, and for writing research papers and progress reports. This position is funded by the American Cocoa Research Institute via a permanent endowment. An initial offer of one year will be made renewable on a yearly basis for at least three years contingent on successful progress. A Ph.D. in plant sciences with experience in plant tissue culture and transformation systems is required. Preference will be given to applicants with several years of prior postdoctoral research experience. Salary will be commensurate with experience. Applications will be

accepted until the position is filled. Write or e-mail: Mark Guiltinan, Penn State University, Dept. PPN, 306 Wartik Lab, University Park, PA 16802-5807; telephone 814-863-7957, e-mail mjpg@psupen.psu.edu. An affirmative action/equal opportunity employer. Women and minorities encouraged to apply.

Postdoctoral Position
Texas A&M University, College Station
(New)

A postdoctoral position is available to study arabinogalactan-proteins (AGPs) in xylem of pine. We have cloned two xylem-specific putative AGPs from differentiating xylem and are using a variety of molecular and biochemical techniques to examine their function and regulation. Experience in molecular biology, protein purification and characterization, and plant biology desirable. Please send a request for an official application form, a statement of research interests, curriculum vitae, and the names, addresses, and fax and phone numbers of three references to: Dr. Carol Loopstra, Department of Forest Science, MS 2135, Texas A&M University, College Station, TX 77843-2135; e-mail loopstra@rsgis4.tamu.edu. The Texas A&M University system is an equal opportunity/affirmative action employer.

Postdoctoral Position
Cornell University, Geneva, New York
(New)

Position in Molecular and Cell Biology available immediately to investigate "integrin" as a signal mediation protein in the fungus, *Uromyces*. The fungus perceives topography for initiation of appressoria (Science 235: 1659). Activities will involve isolation of key proteins, gene cloning, and analysis of integrin genes. Ph.D. in the biological sciences is required with skills and knowledge in molecular biology applications. One-year appointment with benefits, renewable for a second year. Send curriculum vitae, three letters of reference to: Dr. H. C. Hoch, Department of Plant Pathology, Cornell University, NYSAES, Geneva, NY 14456; telephone 315-787-2332, e-mail hch1@nysaes.cornell.edu.

Postdoctoral Position
University of Pennsylvania, Philadelphia
(New)

A postdoctoral position is available to study photoregulatory signal transduction in *Arabidopsis*. Experience in molecular genetics and/or cell biology is required. Please send curriculum vitae and three letters of reference to: Anthony R.

Cashmore, Director, Plant Science Institute, Department of Biology, University of Pennsylvania, Philadelphia, PA 19104-6018; e-mail alaurino@sas.upenn.edu.

Postdoctoral Position
The Samuel Roberts Noble Foundation
Ardmore, Oklahoma
(Repeat)

Contact: Dr. Nancy L. Paiva, Plant Biology Division, The Noble Foundation, P.O. Box 2180, Ardmore, OK 73401; fax 405-221-7380. (Details January/February 1996.)

Postdoctoral Position
Laboratoire de Biologie Moleculaire des
Relations Plantes-Microorganismes
CNRS/INRA, France
(Repeat)

Contact: Dominique Roby, Laboratoire de Biologie Moleculaire des Relations Plantes-Microorganismes, INRA/CNRS, F-31326 Castanet-Tolosan Cedex, France; telephone 33-61-28-53-26, fax 33-61-28-50-61, e-mail roby@toulouse.inra.fr. (Details January/February 1996.)

Postdoctoral Position
Yale University, New Haven, Connecticut
(Repeat)

Contact: Alice Y. Cheung, Department of Biology, Yale University, P.O. Box 20-8104, New Haven, CT 06520-8104. (Details January/February 1996.)

Postdoctoral Position
Rice University, Houston, Texas
(Repeat)

Contact: Dr. Janet Braam, Biochemistry and Cell Biology, Rice University, Houston, TX 77005-1892; e-mail braam@bioc.rice.edu. Affirmative action/equal opportunity employer. (Details January/February 1996.)

Postdoctoral Position
Cornell University, Ithaca, New York
(Repeat)

Contact: Dr. Karen L. Kindle, 151 Biotechnology Building, Cornell University, Ithaca, NY 14853. The Boyce Thompson Institute and Cornell University are affirmative action and equal opportunity employers; women and minorities are encouraged to apply. (Details January/February 1996.)

Postdoctoral Position
Oklahoma State University, Stillwater
(Repeat)

Contact: Dr. Charles G. Tauer, Department of Forestry, telephone 405-744-5462, fax, 405-

744-9693, e-mail ctauer@okway.okstate.edu or Dr. Bjorn Martin, Department of Agronomy, telephone 405-744-6410, fax 405-744-5269, e-mail bcm@soilwater.agr.okstate.edu, Oklahoma State University, Stillwater, OK 74078. (Details January/February 1996.)

Postdoctoral Position
Mississippi Agricultural Forestry
Experimental Station
Stoneville, Mississippi
(Repeat)

Contact: Stephen O. Duke, USDA, ARS, P. O. Box 350, Stoneville, MS 38776; telephone 601-686-5272, fax 601-686-5422, e-mail sduke@ag.gov. (Details January/February 1996.)

Postdoctoral Position
University of Minnesota, St. Paul
(Repeat)

Contact: Dr. Deborah Allan, Department of Soil, Water and Climate, University of Minnesota, St. Paul, MN 55108; e-mail dallan@soils.umn.edu. Application review begins April 1, 1996. The University of Minnesota is an equal opportunity educator and employer. (Details January/February 1996.)

Postdoctoral Position
Louisiana State University, Baton Rouge
(Repeat)

Contact: Dr. Norimoto Murai, Department of Plant Pathology and Crop Physiology, Louisiana State University, Baton Rouge, LA 70803; telephone 504-388-1380, fax 504 388-1415. (Details January/February 1996.)

Studentships
University of Waikato
Hamilton, New Zealand
(Repeat)

Contact: Dr. M. Connett, Dept. of Biological Sciences, University of Waikato, Private Bag, Hamilton, New Zealand; telephone 7 856 2889 ext. 8898, e-mail mconnett@waikato.ac.nz. (Details January/February 1996.)

Postdoctoral Position
INRA, Versailles, France
(Repeat)

Contact: Dr. Veronique Santoni, telephone 33 1 30 83 30 95, fax 33 1 30 83 30 99, e-mail santoni@versailles.inra.fr. (Details January/February 1996.)

Junior Specialist
University of California, Berkeley
(Repeat)

Contact: Dr. Peggy G. Lemaux, Department of Plant Biology, 111 Koshland Hall, University of California, Berkeley, California 94720. The University of California is an affirmative action/equal employment employer. Minorities and women encouraged to apply. (Details January/February 1996.)

FELLOWSHIPS, TRAINEESHIPS,
GRADUATE ASSISTANTSHIPS, AND
ETC.

Postdoctoral Fellowship in
Plant Signal Transduction
Waksman Institute, Rutgers University,
Piscataway, New Jersey
(New)

A postdoctoral research position is available to study signal transduction during induction of disease resistance to viral infections of tobacco and Arabidopsis. Genetic, molecular, and biochemical approaches are being utilized. Emphasis is being placed on defining components of these pathways, particularly the salicylic acid signaling pathway (PNAS, 1995, 92: 4134, 7143, and 11312). Applicants should have research experience in genetics, molecular biology, and/or biochemistry. Send a curriculum vitae and a cover letter detailing experience and have three letters of recommendation sent to: Dr. Daniel Klessig, Waksman Institute, Rutgers University, P. O. Box 759, Piscataway, N J 08855. Rutgers University is an equal opportunity/affirmative action employer.

Research Fellows
University of Minnesota, St. Paul
(New)

The Department of Horticultural Science, receives and evaluates applications for part- and full-time temporary research positions continuously. Positions become available throughout the year, and are not continually available. Open temporary positions may be obtainable by persons holding an earned master's degree with applicable research training and/or experience; degree must be in hand at the time of appointment. Submit a letter of interest and resume to Dr. Gary M. Gardner, Head, Department of Horticultural Science, University of Minnesota, 305 Alderman Hall, St. Paul, MN 55108. Filing deadline is December 31, 1996. The University of Minnesota is an equal opportunity educator and employer.

**Graduate Research Assistant
University of Maryland, College Park
(New)**

M.S. or Ph.D. assistantship is available in the Department of Horticulture and Landscape Architecture to conduct research in woody plant physiology starting August 1996. Research is focused on the molecular biology and physiology of seasonal nitrogen recycling (including fall nitrogen resorption, storage, partitioning, and senescence), environmental regulation of storage protein gene expression, and woody plant cold hardiness. Assistantship includes stipend, tuition, and health insurance. For more information, contact: Dr. Gary D. Coleman, University of Maryland at College Park, Department of Horticulture and Landscape Architecture, 1122 Holzapfel Hall, College Park, MD 20742; telephone 301-405-4371, fax 301-314-9308, e-mail gc76@umail.umd.edu.

**Ph.D Fellowship in Plant Carbohydrate
Biotechnology
North Carolina State University, Raleigh
(Repeat)**

Contact: Dr. Dennis J. Werner, Graduate Program Director, Department of Horticultural Science, NCSU, Raleigh, NC 27695-7609; telephone 919-515-1226; e-mail dennis_werner@ncsu.edu. (Details January/February 1996.)

Beginning with the
May/June 1996
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all jobs submitted
for publication
will be placed on line
weekly
as they are submitted.

Check the
ASPP Web site
at
<http://aspp.org>.

American Society of Plant Physiologists

Membership Proposal

Please return this form (or a copy of it) with your mailing label attached, correcting the label if appropriate. ASPP headquarters staff will do the rest (send the proposed member an invitation to join and correct your address as necessary) and inform you of it. We welcome new members worldwide, recognizing that in science, especially, to remain static is to wither. To acquire new members is to infuse science with ideas, understanding, and the intellectual tools that lead to creative, innovative transfer of knowledge and skills.

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