ASPB News

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Inside This Issue

President's Letter

Genetically Engineered Plants and Ballot Measures: The Good, the Bad, and the Ugly

Roger Hangarter

The Good—Reports continue to appear at an increasing rate that demonstrate novel uses of genetic engineering offering promise for healthier and safer foods, reduction of pesticide use, less disease, and the development of novel crops. Moreover, the same technologies used to create genetically engineered (GE) plants are at the core of the basic research that has been driving, at an ever-increasing pace, a revolution in our knowledge of plant biology.

The Bad—No technology is risk-free, and the introduction of any new process or product can easily lead to fear and mistrust. In spite of a large number of studies indicating that GE plants are not harmful to our health and do not appear to represent significant risk to the environment, there is always the risk of abuse or negligence in the application. This risk, although very small, provides activists with a thread on which they can promote fear campaigns against the use of genetic engineering and the introduction of GE organisms.

The Ugly—Many in the general public lack the scientific understanding of basic plant biology and genetics necessary to reach an informed assessment of the different sides of the GE plant issue. Indeed, as urbanization continues, an increasingly larger percentage of the population is losing an appreciation for the vital role of plants for life on Earth. Combine the fear, the mistrust, and in many cases the drive to beat a competitor in the market, and we have an ugly brew for activists to exploit. Add in some misleading, distorted, and scientifically inaccurate information and we have some truly *Ugly* campaigns against genetic engineering. Also, because some major sponsors of anti-biotech campaigns grow products that compete with lower-priced modified crops in the marketplace, competition is another factor adding to the mix. Our 2004 elections saw the *Ugly* taken to a new level when activists in several California counties were able to include on the ballots, referenda to create laws that would ban growing any GE plant. For example, based on scientifically inaccurate reasoning, the referendum in Humboldt County would, under penalty of imprisonment, have made it "unlawful for any person, firm or corporation to propagate, cultivate, raise or grow genetically modified organisms" in the county. Obviously, this measure would not only have affected farmers; it would also have made outlaws and potentially jailed convicts of many plant scientists. (Who ever thought that studying plant biology in graduate school could make us fugitives from justice?)

So, what should ASPB be doing to enhance the *Good* and minimize the *Ugly?* On behalf of ASPB, the Committee on Public Affairs works to explain the interests of plant science to the U.S. Congress, Executive Branch, and the public. One of the major objectives of the committee is to develop strategies and objectives for support of basic plant science. Because nearly all areas of plant research are depend-

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ing more and more on the same molecular technologies and resources that are necessary for the development of GE crops, the ASPB leadership and the Committee on Public Affairs felt it was important to become engaged and attempt to block ill-conceived politics that threaten basic plant research. As such, we sent letters and issued press releases in those counties that sought to outlaw growing GE plants (http://www.aspb.org/publicaffairs/).

Our actions are not and should not be perceived as a wholesale promotion of GE crops or biotech companies. Biotech companies tend to have similar opposition to ballot measures calling for the jailing of farmers and scientists for growing GE crops, but that should not preclude ASPB's opposition to such measures. I've participated in the development of ASPB position letters and am convinced that the position of ASPB is taken to reflect the science-based knowledge we have today. As articulated in the ASPB Statement on Genetic Modification of Plants Using Biotechnology (http://www.aspb.org/publicaffairs/aspb_statement_on_genetic_modifi.cfm), we were acting in support of "the continued, responsible use of new technologies, such as recombinant DNA technology, which can add effective tools to those needed to combat hunger and maintain a healthy environment."

Fortunately, as a result of efforts by ASPB, local plant scientists, and local farmers, the measures were defeated in three out of four of the California counties. The one county that passed the referendum (Marin) does not have a significant agricultural base or any research university.

With well-funded budgets and messages that are artfully designed to confuse the public, anti-biotech activist groups will continue to threaten basic plant research. I believe that it is a responsible course of action for ASPB to provide science-based findings to public officials and the public on measures concerning GE plants. There will always be some potential for the *Bad* with technological innovation, but when there is significant potential for the *Good* combined with reasonable assurances of safety, it is essential for ASPB and its members to attempt to ward off the *Ugly.* Plant science and the public both stand to benefit—as will Humboldt State College grads like ASPB members Dan Bush, Roger Innes, Richard Sayre, and others, who can still return to reunions there without fear of facing plant propagation charges.

Roger P. Hangarter
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Integrating Plant Omics Research 2004

Integrating Plant Omics Research 2004 was held by the Western Section of the American Society of Plant Biologists on October 22–23, 2004.

The meeting took place at the Jot Travis Student Union on the University of Nevada, Reno, campus and was attended by more than 60 participants. The keynote lecture was delivered by Richard Dixon, Plant Biology Division Director of the S. R. Noble Foundation, Ardmore, Oklahoma, on "Profiling Natural Products for Functional Genomics and Metabolic Engineering in Legumes."

ASPB Executive Director Crispin Taylor presented the awards. Sigma-Aldrich Plant Biotechnology sponsored the awards and provided cash prizes of $250 to each student. Other sponsors included the UNR Vice President for Research; the College of Agriculture, Biotechnology and Natural Resources; and the Department of Biochemistry and Molecular Biology.

From left to right: John Cushman, co-organizer; Jillian Collins, 2nd prize best poster presentation; Josh Wood, 2nd prize best oral presentation; Crispin Taylor, ASPB executive director; Michael Nodine, 1st prize best oral presentation; Grant Cramer, co-organizer; Imad Ajjawi, 1st prize best poster presentation. Photo by Brad Sickler, graduate student, Plant Sciences, UC Davis.

SURF Student Blossoms

This will be the fifth year for the ASPB Summer Undergraduate Research Fellowship (SURF) program. By now, the first SURF students have had a chance to decide whether plant biology will be part of their future, either by continued education or by work experience. The SURF committee is always curious to find out what happens to past fellowship recipients, and so we were thrilled to hear of the success of Nicole Mammarella, a 2002 SURF participant. Nicole presented her poster at Plant Biology 2003 in Hawaii with her mentor John M. McDowell, an assistant professor at Virginia Tech. Both Mammarella and McDowell have communicated with ASPB.

Nicole Mammarella

Mammarella wrote by e-mail:

> Getting the [SURF] fellowship when I did [had] a huge influence on the course of my career. It allowed me to produce a quality honors thesis project. Without being able to work full-time on my project that summer, I never would have been able to produce a cohesive body of work before graduation. Having the fellowship and thesis under my belt was no doubt a significant factor in my grad school admissions. I was able to have two years of continuous work on one project, my poster listed as a publication-type achievement, and the honor of the fellowship listed in my application. I was accepted at all schools I applied to and got a particularly large amount of attention and financial aid offers from the plant programs I was considering. I ended up joining the Biological and Biomedical Sciences program at Harvard Medical School for several reasons, but one of the top draws was the chance to work with Fred Ausubel [also an ASPB member and SURF mentor].
>
> Without the fellowship and the chance it gave me to commit myself to my thesis project, I doubt that I would have been able to fully explore plant biology and give it due consideration as a career path. There are few other opportunities for undergrads to work full-time in molecular plant biology. Attending the conference was a wonderful experience as well. I was introduced to such a variety of fields and interesting avenues of research. I was able to meet several people who I had been interested in talking to and found the workshops very helpful. Plus it was a free trip (or nearly so) to Hawaii, and who in their right mind wouldn't want that?? (I definitely won the fellowship in the proper year.) My involvement with ASPB helped me to explore the world of plant biology as a career. My undergrad biology department didn't provide much exposure to plant bio because we had a separate college for such topics, so Dr. McDowell and the ASPB fellowship gave me a chance to explore this subject and see the opportunities that were available.
>
> At the same time that I received the ASPB fellowship, I was also awarded a Barry M. Goldwater scholarship. Since winning the fellowship and attending the conference I have graduated summa cum laude from Virginia Tech in Honors (refers to the type of diploma) and enrolled at Harvard. I have joined Fred Ausubel's lab, where I'm working on innate immunity in plants, particularly the perception of general elicitors, the signal transduction and gene regulation that follows recognition, and how this is related to R-gene mediated resistance and the larger picture of resistance vs. susceptibility. Last year I applied for and was awarded an NSF Graduate Research Fellowship.
>
> I really do appreciate the support and opportunities ASPB provided me with. The experience was very important in shaping the path I've taken since then.

John M. McDowell wrote a recommendation letter in support of Nicole's successful NSF Graduate Research Fellowship application. In forwarding the letter to us, he stated:

> I'd like to comment that Nicole is one of those special students who make it all worthwhile. She's bright and enthusiastic and has an intuitive grasp of how to design informative experiments and make them work at the bench. More importantly, she's driven by a true love of the biological sciences. The SURF fellowship was important because it allowed ample time to work through some technical glitches that had arisen with her project during the previous year. The ASPB meeting was also an important experience for her, because it provided full immersion in the breadth of exciting questions addressed by plant biologists. I think that she was also engaged by the culture of the meeting, and I truly hope that she is hooked on plant biology for life!

The SURF committee congratulates Nicole on her achievements and thanks John McDowell as well as the other ASPB SURF mentors for their dedication to such students. To find out more about the SURF program, visit the ASPB website and click on Education, then Undergraduate. We are pleased to report that the number of recipients for 2005 will increase from eight to 10 thanks to support from the Good Works fund as approved by the Executive Committee. The recipients for 2005 will be featured in an upcoming issue of the *ASPB News*. For further information, or if you know of another SURF student's success story, please contact Paula Brooks at paula@aspb.org or 301-251-0560, ext. 116.

Paula Brooks
ASPB Education Foundation Assistant
(and SURF Administrator)

Mark Brodl and Jon Monroe
SURF Co-chairs

American Society of Plant Biologists

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Dear ASPB International Member:

I'd like to take a moment of your time to let you know that at ASPB's request the U.S. Department of State has added ASPB's 2005 annual meeting, Plant Biology 2005, to its register of approved international scientific meetings. This means that information regarding PB05 has been sent to U.S. consular offices worldwide, which should help to expedite visa processing for those individuals planning to attend the meeting. Even so, it is still important for you to begin your visa application process 4–5 months in advance of your planned travel date—i.e., no later than March—if you intend to join us for PB05 in Seattle in July.

With registration and abstract submission for PB05 opening on January 1, 2005, you have extra time in which to obtain a letter of invitation from ASPB and take advantage of early bird pricing at http://www.aspb.org/meetings/pb-2005/registration.cfm. Many countries require a letter from ASPB as part of the visa application. To obtain a letter just visit http://www.aspb.org/meetings/letterform.cfm. To find out more about abstract submission, go to http://www.aspb.org/meetings/pb-2005/abstracts/.

To obtain the latest information on visa-processing times at your location, you may wish to visit this new feature on the U.S. Department of State's website: http://travel.his.com/visa/tempvisitors_wait.php. Scroll to the bottom of the page, select your city from the drop-down menu, and hit the "get wait times" button. The system will instantly tell you the current wait time for visa processing at that location. Please note, though, that this wait time does not include additional time that you need to allow for setting up an interview with a consular official or completing the application process.

You can find additional tips from ASPB's Visa Information Web pages (http://www.aspb.org/meetings/visainfo.cfm). Check these pages regularly for updated information and advice.

ASPB has been working hard to make it easier for plant scientists from outside the United States to attend our meetings. I hope you will consider responding to our efforts by making your own plans to attend PB05 in Seattle, and I look forward to meeting each of you there.

Best regards,

Crispin Taylor
Executive Director

Welcome, Newest Members!

ASPB is pleased to honor the following individuals as first-time members of ASPB in 2004. We hope that you continue to benefit from your membership for many years. Contact us at info@aspb.org if you have any questions.

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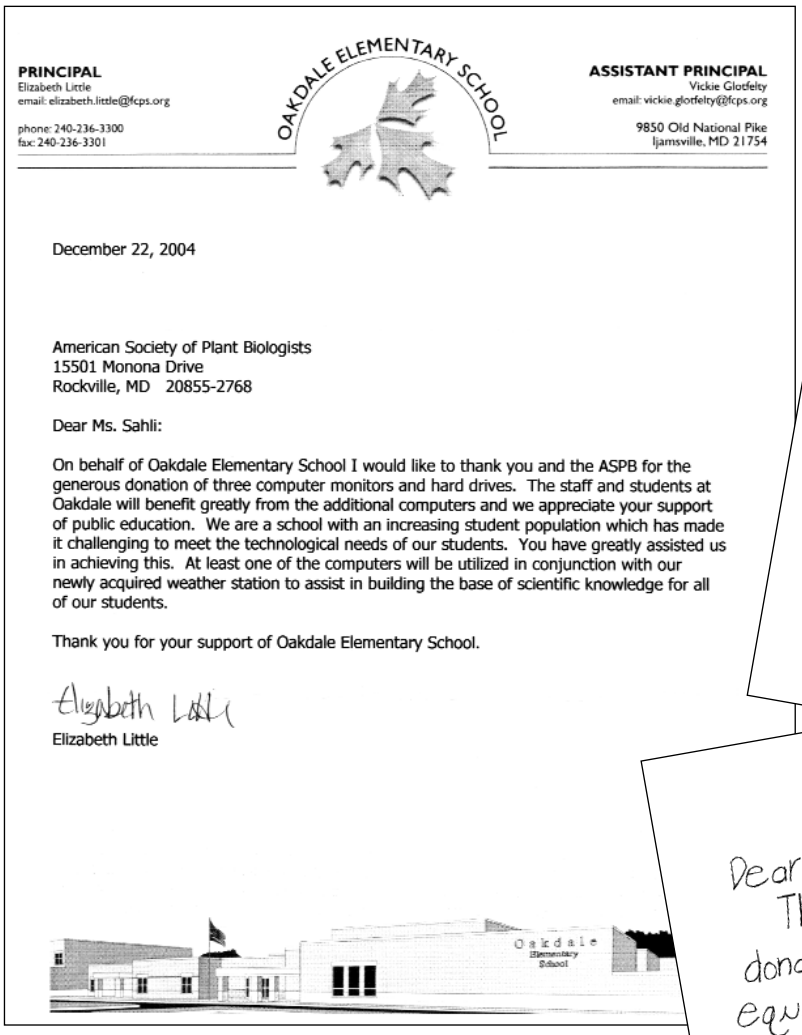
Brent O'Brien
Chang-Sik Oh
Sookyung Oh
Kazuaki Ohara
Maria J. Orofino
Valerie O'Sullivan
Ethel Owusuwaa Owusu
Keiko Ozaki
Seval Ozkan
Grier P. Page
Natalia Palacios Rojas
Ajay Kumar Pandey
Ellen T. Paparozzi
Sung O. Park
Jeong Mee Park
Jeongmoo Park
Jin Ho Park
Soo Kwon Park
Su-Jung Park
Sun Chung Park
Isobel Parkin
Susan E. Parkinson
Aparna G. Patankar
Scott C. Peck
Vincent Ullas Pedmale
Bela Peethambaran
Jose Manuel Perez-Perez, Jr.
Michael W. Persans
Annita G. Peterson
Deborah L. Petrik
Emily Pierson
Guillaume Pilot
Rafael Pinol, Sr.
Abigail Polter
Sorina C. Popescu
Brigitte Poppenberger
Charmaine L. Porter
Michael F. Portereiko
Vladimir A. Portyanko
Rejane Pratelli
Christopher E. Pray
Daryl Pring
Matthew F. Pulley
Jin Qian
Taylor S. Quedensley
Pablo A. Quijada
Christopher D. Rahn, Sr.
Mamta Rai
Girija Raman
Stefanie Ranf
Tyrone R. Rankin
Hongyu Rao
Rosa Rao
Vidya S. Rao
Reetika Rawat
Thomas B. Ray
Michelle J. Raymond
Lovett E. Reddick
M. S. Srinivasa Reddy
Joanna L. Redfern
Kristin Regan
Josephine S. Resnick
Nathan Reyna
Benjamin Rietschel
Lauren B. Riggio
Maximo L. Rivarola
Rosa M. Rivero
Ludmila Rizhsky
Christopher J. Rizzo
Dae-Kyun Ro
Jamille Y. Robinson
Stephen J. Robinson
Pedro S.C.F. Rocha
Eloy Rodriguez
Miguel A. Rodriguez
Stephanie J. Rogers
Hardy Rolletschek
Jeanne Romero-Severson
Mily Ron
Barbara A. Rosen
Beth E. Rueschhoff
John Ruffino
Daniel R. Ruzicka
Nayeon Ryoo
Sun-Hwa Ryu
Frank Sainsbury
Hitoshi Sakakibara
Partha P. Samadder
Angela P. Sample
Indra Sandal
Heather L. Sanders
Aaron A. Santner
Abhijit Sanyal
Harjinder W. Sardar
Izumi Sasaki
Ryuzo Sasaki
James J. Saylor
Judith Scharte
Andreas Schiermeyer
Lotte M. Schlegel
Judy A. Schnurr
Tamar Schor-Fumbarov
Elizabeth A. Schultz
John C. Sedbrook
Ron R. Sederoff
Alexandre Robert Seilaniantz
Shukdeb Sen
Tai Chi Seto
Robert E. Sevenier
Mustafa N. Shafqat
Yongjin Shang
Jacqueline V. Shanks
Natalya Sharopova
Heather L. Shearer
Guoxin Shen
Rui Shi
Kenichi Shibuya
Hwa-Soo Shin
Svetlana Shishkova
Jeff L. Shultz
James M. Sides
Vladimir A. Sidorov
Keri E. Silva
Erin M. Silva
Cecilia Silva-Sanchez
Ivan Simko
Jo Simons
Priya N. Singa
Braja B. Singh
Hari P. Singh
Beohar Anupam Sinha
Supaart Sirikantaramas
May N. Siripant
Stacy Smith
Moon-Soo Soh
David A. Somers
Shauna Somerville
Keming Song
Younghun Song
Barbara E. Soots
Julie Soukupova
Clint J. Springer
David W. Stair
Charles Stewart, Jr.
Jennifer L. Stonaker
Gary W. Stutte
Aya Sugino
Ji Yeon Suh
Michael Sulzinski
Kelian Sun
Meihao Sun
Yujin Sun
Kasinee Sungcome
Keita Sutoh
Rachid Tahzima
Tomoko Takabe
Shinya Takahashi
Yuri Takahashi
Sumiyo Tanabe
Hoang V. Tang
Xurong Tang
Lizhen Tao
Erja Taulavuori
Kari Taulavuori
Futoshi Taura
Venkata S. Tavva
J. Philip Taylor
Kazuyoshi Terasaka
Jagdish C. Tewari
John Thoguru
Jean M. G. Thomas
Paul W. Thomas
Jeffry M. Thornsberry
Guowei Tian
Ming Tien
Marja C. P. Timmermans
Stella M. Tinnirello
Alain F. Tissier
Takashi Togashi
Motoki Tominaga
Mahmut Tor
C. Tosin
Kiminori Toyooka
Jatindra N. Tripathy
Athanasios Tsaftaris
Pei-Lan Tsou
Naoki Tsuji
Grete Tulinius
Meral Tunc
Peter Twumasi
Nikolaos Tzortzakis
Akio Uchida
Manjusha Vaidya
Angel Valdez-Ortiz
Jaimie Van Norman
Remco M. P. Van Poecke
Valerie Van Wilder
Maria Jose V. Vasconcelos
Irina I. Vaseva-Gemisheva
Mariah B. Veit
Srivathsa C. Venugopal
Nathalie M. Verbruggen
Patrick Vincent
Chung Chi Wang
Dafu Wang
Keri Wang
Nai Wang
Qinghua Wang
Wuyi Wang
Xiaofeng Wang
Xiaojing Wang
Zhong Qi Wang
James T. Ward
Lance A. Warren
Elizabeth R. Waters
Anthony D. Watson
Shu Wei
Tamara E. Wells
David J. Weston
Deborah J. Wetterberg
Philip J. White
Ryan M. Whitford
Matthew D. Whiting
Sherry R. Whitt
Amanda Wibley
Chalance C. Williams
Joshua I. Wilson
Katherine Wiltberger
Daniel Wipf
Keri L. Witman
Peter Wittich
Keith E. Woeste
Hann Ling Wong
Lankun Wu
Xianzhong Wu
Huogen Xiao
Guohua Xu
Hong-Wei Xue
Jessica P. Yactayo
Hitomi Yamada
Kazuko Yamaguchi-Shinozaki
Kousuke Yamamoto
Haiyan Yan
Aifang Yang
Chin-Ying Yang
Daichang Yang
Jaemo Yang
Jianping Yang
Jie Yang
Shu-Yi Yang
Wei-cai Yang
Wenyu Yang
Xiaohan Yang
Xiaohui Yang
Yinong Yang
Zhong-Nan Yang
Zhuping Yang
David I. Yates
Junshi Yazaki
Mamatha Yerram
Jungwon Youm
Jared J. Young
Xuhong Yu
Kseniya Zakharyevich
Phillip D. Zamore
Nai-Yan Zeng
Wei Zeng
Crystal Siyu Zhang
Deshui Zhang
Hong Zhang
Jianhua Zhang
Qin Zhang
Xiuren Zhang
Yuanji Zhang
Yuwen Zhang
Aifen Zhou
Changhe Zhou
Xiangjun Zhou
Jinming Zhu
Kelly E. Zinn
Xiaohong Zhu
Yongqing Zhu

ASPB Headquarters Donates Used Computers

When Burton Nicodemus, ASPB's network administrator, asked if anyone on staff knew of good locations to donate old but still usable computers, we couldn't think of a better location than a school. The computers were left over from a few system upgrades. Staff member Wendy Sahli's husband Steve is a second-grade teacher at Oakdale Elementary in Frederick, Maryland, so staff checked with his school to see if it would accept the computers. Oakdale gladly accepted the donation, noting that a science project was on hold at the moment because of the lack of a computer for it. The other computers were put into the computer lab for all students to use. The students were so excited to receive the computers that they wrote a few thank-you notes to ASPB (see below).



PRINCIPAL
Elizabeth Little
email: elizabeth.little@fcps.org

phone: 240-236-3300
fax: 240-236-3301

OAKDALE ELEMENTARY SCHOOL

ASSISTANT PRINCIPAL
Vickie Glotfelty
email: vickie.glotfelty@fcps.org

9850 Old National Pike
Ijamsville, MD 21754

December 22, 2004

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

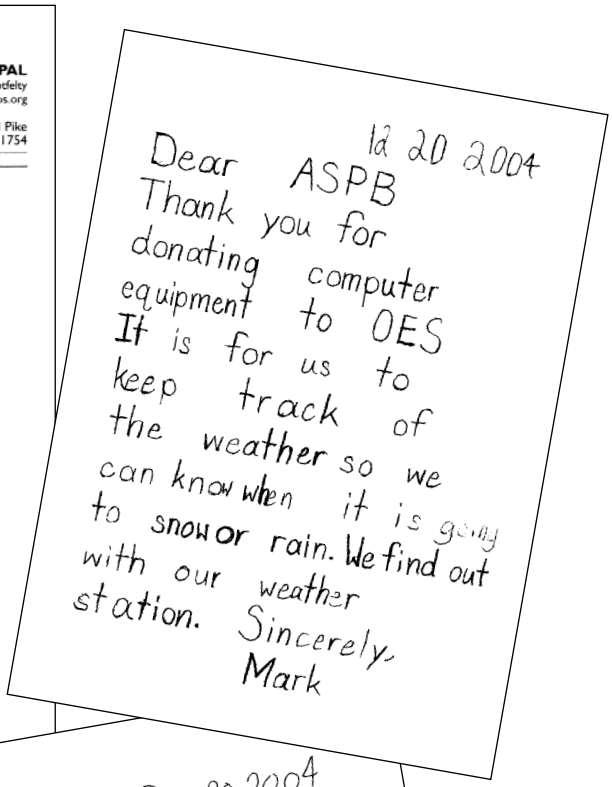
Dear Ms. Sahli:

On behalf of Oakdale Elementary School I would like to thank you and the ASPB for the generous donation of three computer monitors and hard drives. The staff and students at Oakdale will benefit greatly from the additional computers and we appreciate your support of public education. We are a school with an increasing student population which has made it challenging to meet the technological needs of our students. You have greatly assisted us in achieving this. At least one of the computers will be utilized in conjunction with our newly acquired weather station to assist in building the base of scientific knowledge for all of our students.

Thank you for your support of Oakdale Elementary School.

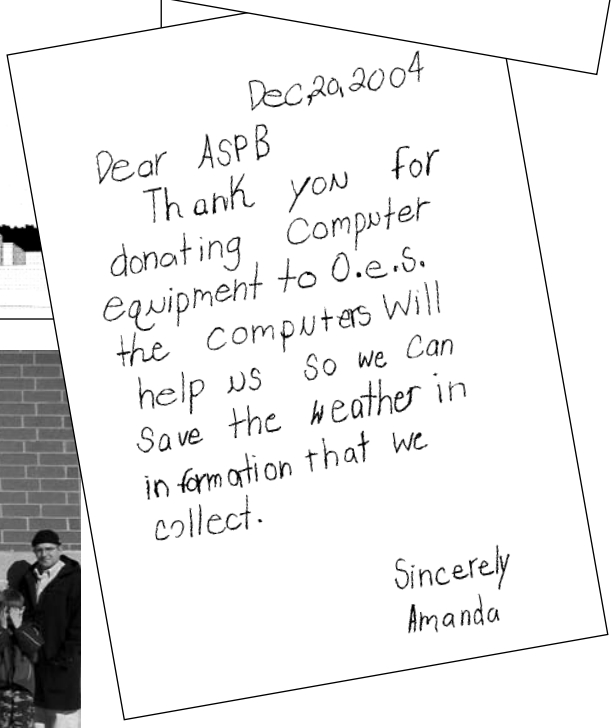
Elizabeth Little

Elizabeth Little



Ia 20 2004

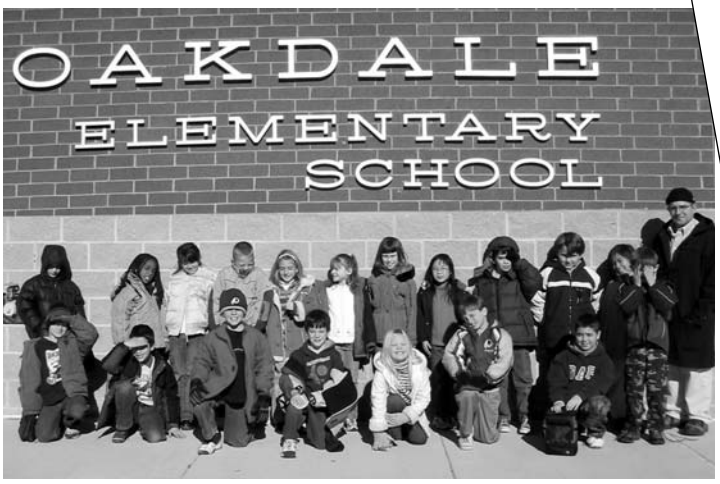
Dear ASPB
Thank you for
donating computer
equipment to OES
It is for us to
keep track of
the weather so we
can know when it is going
to snow or rain. We find out
with our weather
station. Sincerely,
Mark



Dec 20, 2004

Dear ASPB
Thank you for
donating Computer
equipment to O.e.s.
the computers Will
help us So we Can
Save the weather in
information that we
collect.

Sincerely
Amanda



Left: Teacher Steve Sahli with his second-grade class in front of Oakdale Elementary.

Addressing Ethical Standards: Authorship

When you get right down to it, is anything in scholarly publishing more problematic than figuring out how to appropriately acknowledge all the various contributors who help bring to fruition the results of a research project? We all know of cases in which authorship has been hotly disputed. For example, a graduate student successfully defends his or her thesis and moves on to a postdoctoral position. The paper derived from the student's thesis work is submitted to a journal but is rejected because the reviewers and editor say it requires additional experiments to fully support the claims it makes. The ex-student is not in a position to do the necessary work, so a new person is recruited to the project. And then the dispute over authorship begins. Often Solomonic wisdom is insufficient to satisfy all the participants.

In this article on authorship, the third in the *ASPB News* series on "Addressing Ethical Standards," we attempt to give guidance on when colleagues should be listed as authors versus when they should be acknowledged as contributors, and we outline the responsibilities that come with authorship.

"Ethics in Publishing: ASPB Policies and Procedures for Handling Allegations of Author Misconduct" (www.aspb.org/publications/ethics.cfm) states that "All authors of articles submitted for publication assume full responsibility, within the limits of their professional competence, for the accuracy of their paper." Perhaps more instructive are these passages from the Instructions for Authors from ASPB's two journals, *Plant Physiology* and *The Plant Cell*.

From *Plant Physiology* (http://www.plantphysiol.org/misc/ifora.shtml): "Authorship credit should be based only on substantial contributions to (a) conception and design, or analysis and interpretation of data; and to (b) drafting the article or revising it critically for important intellectual content; and on (c) final approval of the version to be published. Conditions a, b, and c must all be met. Any part of an article critical to its main conclusions must be the responsibility of at least one author. Each author should have participated sufficiently in the work to take public responsibility for the content." [This statement is adapted from the authorship policy adopted by the International Committee of Medical Journal Editors (ICMJE) and published in the Uniform Requirements for Manuscripts Submitted to Biomedical Journals, 1994 (http://www.icmje.org/index. html).]

Each author should have participated sufficiently in the work to take public responsibility for the content.

And from *The Plant Cell* (http://www.plantcell.org/misc/ifora.shtml): "Contribution to a manuscript must be substantive in order to justify authorship. An author is responsible for major aspects of the research that is presented. All other contributors should instead be acknowledged appropriately in the Acknowledgments section. The corresponding author is responsible for ensuring that all authors have made bona fide, substantive contribution to the research and have seen and approved the manuscript in final form prior to submission."

In keeping with past articles in this series, we refer readers to related articles of interest on the web. Reprinted here is the section entitled "Ethical Considerations in the Conduct and Reporting of Research, Authorship and Contributorship" in the ICMJE Uniform Requirements for Manuscripts Submitted to Biomedical Journals (October 1994) that is referenced in the *Plant Physiology* Instructions for Authors. To read the full document, please visit http://www.icmje.org/index.html.

Another article readers might find interesting is the report of the Bioengineering Consortium of the National Institutes of Health (BECON): "Catalyzing Team Science," specifically the section on pages 8–9 (PDF version) entitled "Recommendations Regarding Credit, Ownership, and Dissemination Issues." This document can be viewed at http://www.becon.nih.gov/symposium2003.htm.

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Chair, Publications Committee
c.robertson.mcclung@dartmouth.edu

Nancy Winchester
Director of Publications
nancyw@aspb.org

ICMJE Uniform Requirements for Manuscripts Submitted to Biomedical Journals

II. Ethical Considerations in the Conduct and Reporting of Research

II.A. Authorship and Contributorship

II.A.1. Byline Authors

An "author" is generally considered to be someone who has made substantive intellectual contributions to a published study, and biomedical authorship continues to have important academic, social, and financial implications. (1) In the past, readers were rarely provided with information about contributions to studies from those listed as authors and in acknowledgments. (2) Some journals now request and publish information about the contributions of each person named as having participated in a submitted study, at least for original research. Editors are strongly encouraged to develop and implement a contributorship policy, as well as a policy on identifying who is responsible for the integrity of the work as a whole.

While contributorship and guarantorship policies obviously remove much of the ambiguity surrounding contributions, it leaves unresolved the question of the quantity and

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quality of contribution that qualify for authorship. The International Committee of Medical Journal Editors has recommended the following criteria for authorship; these criteria are still appropriate for those journals that distinguish authors from other contributors.

Authorship credit should be based on 1) substantial contributions to conception and design, or acquisition of data, or analysis and interpretation of data; 2) drafting the article or revising it critically for important intellectual content; and 3) final approval of the version to be published. Authors should meet conditions 1, 2, and 3.

When a large, multi-center group has conducted the work, the group should identify the individuals who accept direct responsibility for the manuscript (3). These individuals should fully meet the criteria for authorship defined above and editors will ask these individuals to complete journal-specific author and conflict of interest disclosure forms. When submitting a group author manuscript, the corresponding author should clearly indicate the preferred citation and should clearly identify all individual authors as well as the group name. Journals will generally list other members of the group in the acknowledgments. The National Library of Medicine indexes the group name and names of individuals the group has identified as being directly responsible for the manuscript.

Acquisition of funding, collection of data, or general supervision of the research group, alone, does not justify authorship.

All persons designated as authors should qualify for authorship, and all those who qualify should be listed.

Each author should have participated sufficiently in the work to take public responsibility for appropriate portions of the content.

Some journals now also request that one or more authors, referred to as "guarantors," be identified as the persons who take responsibility for the integrity of the work as a whole, from inception to published article, and publish that information.

Increasingly, authorship of multi-center trials is attributed to a group. All members of the group who are named as authors should fully meet the above criteria for authorship.

The order of authorship on the byline should be a joint decision of the co-authors. Authors should be prepared to explain the order in which authors are listed.

II.A.2. Contributors Listed in Acknowledgments

All contributors who do not meet the criteria for authorship should be listed in an acknowledgments section. Examples of those who might be acknowledged include a person who provided purely technical help, writing assistance, or a department chair who provided only general support. Financial and material support should also be acknowledged.

Groups of persons who have contributed materially to the paper but whose contributions do not justify authorship may be listed under a heading such as "clinical investigators" or "participating investigators," and their function or contribution should be described —for example, "served as scientific advisors," "critically reviewed the study proposal," "collected data," or "provided and cared for study patients."

Because readers may infer their endorsement of the data and conclusions, all persons must give written permission to be acknowledged.

OFAC Update

An article in the September/October 2004 issue of the *ASPB News* reported that the U.S. Treasury Department's Office of Foreign Assets Control (OFAC) had forbidden the provision of copyediting services to authors living in embargoed nations including Sudan, Cuba, and Iran. Many publishers, as well as the Association of American Publishers, were vocal in their objections to the ruling, and on February 9, 2004, a meeting was convened in Washington, DC, to bring together publishers and a representative from OFAC. After several more rounds of meetings, Treasury ruled on December 15, 2004, that trade embargoes do not restrict publishing. This ruling means that U.S. publishers, including scholarly societies and university presses, do not have to apply for a license to edit or publish works by authors in Cuba, Iran, or Sudan (no other embargoed nations were specifically mentioned).

Reminder!

In consideration of the low member subscription rates to the print versions of *Plant Physiology* and *The Plant Cell* and the free online access to both journals that all members enjoy, members agree to retain their personal copies of the journals for at least three years from the date of issue, not depositing them in any library or institution before the end of this time. Members also agree not to release their personal access code, assigned by ASPB, to any other party for the duration of their membership in ASPB. Thank you!

Membership Corner

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

If you are interested in contributing to this feature, please contact ASPB Membership at info@aspb.org.

Name: Philip A. Rea
Title: Professor of Biology
Place of Work or School: Plant Science Institute, Department of Biology, University of Pennsylvania
Research Area: Energy-dependent transport across membranes and cellular mechanisms of detoxification in plants and yeast (occasionally worms)

Member Since: 1989

1. **Has being a member of ASPB helped you in your career? If so, how?**
   Yes, by giving my colleagues and me a sense of the depth, breadth, and practicality of plant research through frequent interactions with ASPB's members and reference to its journals, website, newsletter, and membership directory. Not only has this been immensely enriching at a personal level, but it has also been instrumental in helping us appreciate, and sometimes realize for the first time, the broader significance and potential for application of some of our more basic (more esoteric) investigations.
2. **Why has being a member of ASPB been important?**
   Because the kick is in finding out stuff about stuff and sharing it with others, and if you're a plant scientist there are not so many organizations with this aim as their primary remit. The simple fact of the matter is that I would not know half of what I know if not for ASPB and its membership.
3. **Was someone instrumental in getting you to join ASPB?**
   There was no one person who prompted me to join but rather many; in fact, most if not all of the plant scientists I knew were already members and without exception spoke or wrote highly of the Society.
4. **What would you tell nonmembers to encourage them to join?**
   That it would be folly to do otherwise given how rich a resource of people, expertise, and unfettered enthusiasm for the plant sciences ASPB represents.
5. **Have you found a job using ASPB job postings or through networking at the annual meeting?**
   I have not found a job directly using ASPB job postings or from chance encounters at the annual meeting, but several of the people from my group have. The meeting is a great gathering place for scientists—especially for those who are just starting out—to learn what gainful employment the "plant world" has to offer. "Networking" is a word I prefer not to use because it smacks of "corporate-speak" and using people disingenuously as a means to selfish ends.
6. **Have you hired anyone as a result of a job posting at the meetings or on our online Job Bank?**
   Yes, I've hired many of the postdocs in my group either directly through ASPB postings or through the discovery of postings after the event and unsolicited inquiries into the availability of similar positions in my group.
7. **Do you still read print journals? If so, where do you usually read them?**
   Most of the articles I read are printed from online PDFs that I stuff in my bag and read anywhere, but mostly when traveling. There is clarity of thought and a sense of adventure that come from the anonymity of traveling alone (no disrespect to family and friends who I also like to travel with, but in a different way). That said, if money were not an impediment, we would subscribe to as many print journals as possible and have them delivered to the lab or department for display and reading anywhere, anytime. There is something to be said for the "browse factor"—the stuff you learn that you would not learn otherwise—by literally bumping into it when leafing through journals looking for other stuff (or having it pushed in your face at Plant Biology meetings and the like). Online literature searches using keywords seem to make life easier, but this may be illusory in that they can be so directed as to preclude encounters with the unexpected (or expected but in an unexpected context).
8. **What do you think is the next "big thing" in plant biology?**
   The next big thing in plant biology will be a uniquely computer-savvy investigator or group of investigators who learns how to walk through proteins, grapple with the protein subterranean, in his/her mind at his/her workstation to discover the basic principles needed for inferring the three-dimensional structure of proteins from their primary structure. This will provide the biomedical research community, of which we are becoming an increasingly visible/vocal part, with computer algorithms for deducing the likely structures of proteins from their ORF [open reading frame]. This will open the way for deep mechanistic analyses of how functions are executed at the systems level—the *biochemical renaissance*—in one of the most tractable metazoa, after worms and flies, namely the weed (Arabidopsis), and therefore all or most plants.
9. **What person, living or dead, do you most admire?**
   Immediate family (especially Jenny, my ultimate inspiration and guiding light even in the darkest of times) and close friends apart, the people (no single person, however) who first come to mind when I am asked this question are John Lennon,

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Richard Feynman, Albert Lehninger, Peter Mitchell, and Jack Dainty and Enid MacRobbie. I discovered John Lennon largely "after the event," shortly before he died, literally a couple of weeks before the UK release of *Double Fantasy*…and his sad demise outside his Manhattan apartment. "Life's what happens to you when you're busy making other plans." A rebel thinker, a poet who dreamed of a better world, an ordinary boy of the people, for the people, who came from nowhere but with a huge wealth of creativity as a songwriter, performer, graphic artist, and activist. Richard Feynman was simply a genius physicist and genius generalist, with an enchanting down-to-earthness, sense of humor, and capacity to explain the most sophisticated of principles using the simplest of terms. He was a truth seeker, a model of a teacher. Immediately before starting a new series of lectures, I listen to CDs of Feynman's *Lost Lectures* in physics to get a mental picture of what I should be striving for when teaching biochemistry. No harm in wishing! Albert Lehninger was not only a superb bioenergetic biochemist but also the sole author of the first few editions of *Biochemistry,* the second of which (I think) got me hooked on the explanatory power and sheer beauty of biochemistry for the very first time. I literally trembled with anticipation when I first leafed through the book in my digs in Brighton, England. Peter Mitchell—what can I say? One of the fathers of chemiosmosis (he, Robertson, and Lundergard and probably a few others who did not get the publicity) and its strongest protagonist who had to suffer the utter disbelief, and in some cases disdain, of many of his colleagues for more than a decade but who was so right as to be frighteningly incisive (but only in retrospect) about how organisms harness redox energy through the establishment of transmembrane "delta mu bar Hs." And Jack Dainty and Enid MacRobbie, who unknown to them to this day, gave seminars that I attended as a first-year undergraduate. They set my mind alight not only by what they were saying about transport across plant membranes but also because of the realization that these two outstanding scientists (the "father" and "mother" of two of the principal investigators with whom I was to postdoc many years later—Ron Poole and Dale Sanders) who were talking to little me were real scientists who had, themselves, contributed directly through their research activities to the subject they were teaching. This discovery, hand in hand with recognition of the fact that even people who were active in the field could not answer many of the basic questions and were prepared to admit to this, filled me with admiration for their humility and impelled me to learn more so that I might, one day, have the opportunity to tackle some of these questions myself.

10. What are you reading these days?

Now that our kids can now take care of their reading for themselves, though *Harry Potter* and *Redwall* still make a terrific read, I am (almost as I write) revisiting Lewis Thomas *(Late Night Thoughts on Listening to Mahler's Ninth Symphony)* because one of his other collections of essays *(The Lives of a Cell),* which I read in my late teens, made a lasting impression on me in terms of his deep aesthetic appreciation of what modern biology has to tell us about the world using language that anyone can understand. Another reason for my sneaking a peek at Thomas's work is that I have started doing the same but from a more biochemical vantage point. The other book I am reading is *QUANTUM: A Guide for the Perplexed,* by Jim Al-Khalili. The flyer for this book says it all— "Quantum mechanics is the most fundamental scientific theory known to man . . . and even underpins reality itself. And yet it has been said that if you are not shocked by it, you clearly have not understood it." My favorite recreational nonfiction reading is physics because it, like much art (I do not see a fundamental division between science and art), invariably takes us to the very edge of existence and beyond.

11. What are your hobbies?

I thought it would swing the other way, but the older I get the more blurred the division between work and play, profession and hobby gets. How does it go—"science is the hobby we get paid to do"? All the same, when I'm not in the lab or in my office or study, or traveling for scientific purposes, I'm on the track or running on the trail. I cannot speak too highly of what this does for you intellectually, spiritually, and physically. This is what gets me up in the morning. My other hobbies, in addition to enjoying the enjoyment of family and friends, are photography (especially black-and-white work verging on the abstract), creative writing, reading, and people watching.

12. What is your most treasured possession?

This one is a no-brainer—health, when we have it (and especially when we or others do not). If this question means "inanimate material thing," then I would have to say "Mizuno running shoes and 35-mm SLR camera with 24-80-mm zoom lens and macro capability." Oh yeah, I should also be honest and say that my "higher-end laptop computer" is high on my list because it's the hub that I take everywhere for doing science, writing, photography, and both professional and recreational e-mail communication.

13. What do you still have left to learn?

How to do everything better with more understanding.

The Bioethics Imperative XX

Structure of the NSF Office of the Inspector General: An Interview with James Kroll

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

Sitting in the second building of the National Science Foundation, Stafford II, on November 22, 2004, I asked James Kroll, head of Administrative Investigations at NSF's Office of the Inspector General (OIG), to describe the structure of the OIG. He kindly sketched for me the figure below. I was surprised to learn that the IG and all the staff are considered a part of the executive rather than the judicial branch of government.

"The Inspector General Act of 1978 established the duties, responsibilities, and authorities of a federal Inspector General (IG). The original act created IGs primarily at cabinet-level government agencies (such as the Department of Commerce). Over the years, the Act has been amended to increase the number of agencies with IGs to include smaller, independent agencies. Currently, 57 IGs provide oversight to 59 federal agencies."[1] Jim told me that the IG Act was expanded in 1989 because this manner of governmental oversight was working well. "Each year billions of dollars are returned to the federal government or better spent based on IG recommendations."

NSF is somewhat unique in that the NSF IG reports to the National Science Board rather than directly to the director of NSF (Figure 1). In contrast to the NSF, the IG of Commerce reports directly to the Secretary of Commerce (not shown) and the IG of Energy reports directly to the Secretary of Energy. Variation in structure between the NSF and other agencies is "statutory guidance," that is, the specific structures for these agencies were spelled out in the IG Act. In addition, each IG provides a semi-annual report directly to Congress regarding investigative and audit activities (Figure 1).

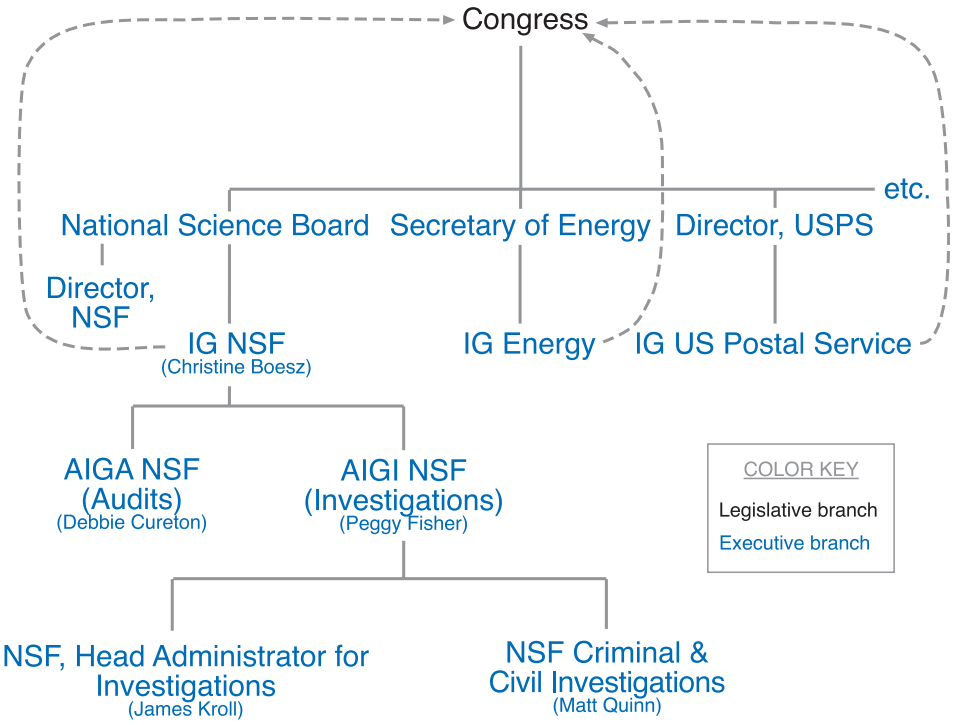

Figure 1. Existing agencies include those listed, as well as others included in the "etc." at the right-hand side of the figure. A full list of agencies that have an IG can be found at http://www.ignet.gov/igs/homepage1.html.

Why is it necessary to have an IG at each agency? "IGs contribute to the effective work of government agencies by looking independently at problems and recommend[ing] possible solutions; issuing fact-filled reports based on professional audit, investigative, and inspection standards; performing independent investigation of allegations; providing technical and/or consultative advice as new plans are developed; and maintaining hotlines for employees and others to report confidential information regarding allegations of fraud and abuse." In addition, Jim explained that the workload and specific concerns of each OIG demand a dedicated staff for each agency that depends on federal funds.

Management and coordination are paramount to smooth functioning in any institution or community, and in this respect the OIG is no exception. "Although each IG is responsible to their own agency, the IG community does work together on common issues. The President's Council on Integrity and Efficiency (PCIE) and the Executive Council on Integrity and Efficiency (ECIE) were established by Executive Order 12805, May 11, 1992, to

- address integrity, economy, and effectiveness issues that transcend individual Government agencies, and
- increase the professionalism and effectiveness of IG personnel throughout the Government.

To accomplish their mission, the PCIE and ECIE members conduct interagency and inter-entity audit, inspection, and investigation projects to promote economy and efficiency in Federal programs and operations and address more effectively government-

continued on next page

Bioethics

continued from page 15

wide issues of fraud, waste, and abuse. The Council members also develop policies, standards, and approaches to aid in the establishment of a well-trained and highly skilled IG workforce." Note that the PCIE and the ECIE are excluded from the formal reporting scheme; however, annually they provide a summary report to Congress highlighting IG-wide efforts and accomplishments.

In general, candidate "IGs are [identified] on the basis of their personal integrity and expertise in accounting, auditing, financial analysis, law, management analysis, public administration, or investigations." The president nominates IG candidates for cabinet-level departments and major agencies. These 29 IGs head agencies such as the Environmental Protection Agency, the Department of Energy, the Department of Defense, NASA, and the Department of Agriculture (http://www.ignet.gov/igs/pas1.html). Senate confirmation is required for these IGs. In contrast, IGs at so-called designated federal entities are appointed by the heads of those entities. These 28 IGs include the NSF, Smithsonian, the Corporation for Public Broadcasting, and the U.S. Postal Service (http://www.ignet.gov/igs/dfe1.html).

"Presidentially appointed IGs serve at the pleasure of the president and can be removed only for cause. Agency-appointed IGs serve at the pleasure of either the agency head or the board depending on the agency" (James Kroll, e-mail to Dina Mandoli, December 13, 2004). There are no term limits for IGs. Chronicles of IG appointments can be perused at http://www.ignet.gov/igs1.html.

Next time: The path that allegations of wrongdoing take through the OIG.

Dina Mandoli
mandoli@u.washington.edu

[1]Unless otherwise attributed, quotations in this article were taken or paraphrased from "An Introduction to the Inspector General Community" at http://www.ignet.gov/igs/igbrochure.pdf.

From the Web

Plant Biology 2005 Online and a New Community Tool

Plant Biology 2005 online registration opened earlier this year at http://www.aspb.org/meetings/pb-2005. Make registering easy by logging in as a member first so the form will be largely filled out for you and check for any certificates you may have to apply toward registration. Once you've registered online, you can later add events or purchase additional t-shirts by logging back in and clicking on a link within your personal member page.

Online abstract submission is opening at the same time, making it easier for members to take care of everything at one time. Submit your abstract by **February 28, 2005,** to be considered for a minisymposium or by May 2, 2005, to get listed in the printed program book. Instructions for submitting your abstract are available at http://www.aspb.org/meetings/pb-2005/callforabstracts.pdf.

Travel grant applications can be downloaded online at http://www.aspb.org/meetings/pb-2005/travelgrant.pdf and, for the second year, a special online meeting message board is available. Get the latest information about all upcoming meetings at http://www.aspb.org.

In 2005, the ASPB website will be undergoing some minor changes. We are adding a few more questions to our forms so that we can learn how to better serve our members and to help us process orders and requests even faster. The site will get a slight facelift in 2005 to enhance usability. Our web content subcommittee will also be discussing new features to add to the site. One new feature recently added is the "Community" area. This new area will replace our forums with some added functionality. When logged in, members have immediate access to a members-only community where communication can take place to assist members in their research efforts; private communities are available for our committees to aid them with yearly planning. Click on the "Community" link under "My Tools" on your personal member page to access this new feature.

Feedback and suggestions for the site are always welcome. Send an e-mail to Wendy Sahli, webmaster@aspb.org.

Wendy Sahli
webmaster@aspb.org

Deadlines for *ASPB News*

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

Issue	Deadline
May/June 2005	April 5, 2005
July/August 2005	June 5, 2005
September/October 2005	August 5, 2005
November/December 2005	October 5, 2005
January/February 2006	December 5, 2005
March/April 2006	February 5, 2006

Congress Increases Fiscal Year 2005 Funding Nearly 10 Percent for NRI, 2 Percent for ARS

The president signed into law December 8 the omnibus appropriations bill (H.R. 4818) approved by Congress that calls for an increase of 9.5 percent for the USDA National Research Initiative Competitive Grants Program (NRI). Funding for the NRI would increase to $179.5 million. Fiscal year 2004 funding for the NRI was at $164 million.

Pursuant to the new law, funding for the Agricultural Research Service (ARS) was increased $20 million, or nearly 2 percent, to $1.102 billion. FY2004 spending at ARS was at $1.082 billion.

We appreciate the help of ASPB members who contacted their congressional offices urging support for important research programs sponsored by the Department of Agriculture.

Overall, non–security-related domestic discretionary spending increases were kept low—an average increase of about 1 percent in the FY2005 spending bill.

Joshua Bolten, director of the Office of Management and Budget, said the spending constraints found in the 2005 appropriations bill are on track as part of a five-year plan to reduce the annual budget deficit by half. Further constraints in spending are expected in the FY2006 budget request that will be released in February.

Congress Approves Increase for DOE Chemical Sciences, Geosciences and Energy Biosciences Division

Congress approved and the president signed fiscal year 2005 omnibus appropriations legislation calling for an increase of $32 million or 14.5 percent for the DOE Chemical Sciences, Geosciences and Energy Biosciences Division.

This increase would put spending for the division at $251 million in FY2005. The department had requested an increase of 4 percent, or $8.8 million. The support by Congress for this division was much higher than for most other non–security-related domestic programs, which received on average a 1 percent increase for FY2005.

The Chemical Sciences, Geosciences and Energy Biosciences Division is within the Department of Energy's Office of Basic Energy Sciences. The overall increase for Basic Energy Sciences was more than 8 percent. Basic Energy Sciences is within the DOE Office of Science, which was up approximately 2 percent in the FY2005 appropriation.

We appreciate the letters, visits, and other contacts by ASPB members with their congressional offices to seek support for DOE energy biosciences.

NSF Plant Genome Research Up 5 Percent, NSF Research Overall Down Less Than 1 Percent

Despite severe constraints on the Appropriations Subcommittee on VA, HUD and Independent Agencies with the low allocation it received, Senator **Christopher Bond** (R-MO) again succeeded in leading efforts to significantly increase support for the NSF Plant Genome Research Program for fiscal year 2005. The House/Senate Conference agreed to the Senate language seeking higher funding for plant genome research. The president signed the legislation into law December 8.

Funding for the NSF Plant Genome Research Program is up nearly $5 million, or more than 5 percent, to $94.24 million for FY2005 compared with $89.47 million in FY2004. Chairman Bond was joined by subcommittee ranking Democrat **Barbara Mikulski** (D-MD) and their colleagues in successfully seeking acceptance of higher funding for the NSF Plant Genome Research Program found in the Senate version.

This legislation (H.R. 4818) provides $4.22 billion for NSF Research and Related Activities. This figure is down less than 1 percent, or about $30 million, from the FY2004 level. Funding is down less than 2 percent for NSF overall in the FY2005 omnibus appropriations bill. NSF funding is at $5.47 billion for FY2005 compared with $5.57 billion last year.

Bond, Mikulski, House Appropriations Subcommittee Chair **James Walsh** (R-NY), and ranking Democrat **Alan Mollohan** (D-WV) and their colleagues, including the leadership, had a huge task in protecting the research budget, addressing housing needs, and meeting the increasing needs of the nation's service veterans in the bill. The White House called for spending limits to produce a bill that would help cut the annual deficit in half over five years.

We appreciate the support of ASPB members who contacted their members of Congress in support of NSF and the NSF Plant Genome Research Program.

Senate Confirms Bement as NSF Director

In the final days of the 108th Congress, the Senate confirmed National Science Foundation Acting Director ***Arden Bement*** *as director of NSF. ASPB President* ***Roger Hangarter*** *applauded the confirmation, noting that Bement's successful and experienced leadership at NSF and at the National Institutes of Standards and Technology have earned him the recognition and respect of congressional offices and the science community.*

Following are portions of the note that Bement sent to his staff when President Bush nominated him as director of NSF:

"The President today announced my nomination to be the next Director of NSF. This is an extraordinary and inspiring honor for me—and one that I feel very humble in accepting.

"The Foundation has a rich history of strong and independent Directors, and I look forward to continuing with that tradition. Most important to our success, however, are you—the staff of NSF. I have come to appreciate your strong qualities and dedication that provide the underpinnings for NSF's organizational excellence. As many of you already know, the Foundation's mission and our accomplishments are critical to the Nation's well-being. Without your help and dedication, none of NSF's goals or objectives can be met. I appreciate your support.

"Although NSF faces significant challenges in the near future due to Federal budget issues, I am committed to the policies and operations that have stood the test of time and have helped make NSF an extraordinary agency. I look forward to working with **Dr. Bordogna,** deputy director of NSF, and all of you in continuing the outstanding manner in which NSF leads the nation. Our pursuit of research and education at the frontiers of science and engineering, our commitment to broadening participation both within and without the Foundation, and our desire to ensure that we have the resources to carry out this vision will be among my top priorities.

"During the upcoming months I will continue as Acting Director while my nomination is pending. I will continue to devote my energies to moving the Foundation forward. I thank you in advance for working with me and look forward to meeting many more of you personally in the days ahead."

Senator Bond Introduces Bill for New Competitive Research Program on Food and Agricultural Science

A bill (S. 3009) to establish a Division of Food and Agricultural Science within the National Science Foundation and to authorize funding for the support of high-quality fundamental agricultural research was introduced as a discussion draft by Senator **Christopher Bond** (R-MO) on November 19.

Senator Christopher Bond

"I present this to begin a critical discussion that I believe we must have over the next several months and perhaps over the next year or so about how we are going to ensure we capitalize on the technology to maximize the benefits and minimize the costs of our agricultural production," Bond said in introducing the bill.

Following are further remarks by the senator:

"We remain the world leader in food and fiber production. We do it safely and through technology and the hard work of the American farmer. In the past half-century, the number of people fed by a single U.S. farm has grown from 19 to 129. We have a tremendously innovative agricultural research program. Our farmers, our farm leaders are on the cutting edge of developing new technology.

"In addition, we export $60 billion worth of agricultural products, and we do so at less cost and at less harm to the environment than any of our competitors around the world, again because of new practices, diligence on the part of farmers, and new technology.

"In a world that has a decreasing amount of soil available for cultivation, we have a growing population and we still have 800 million children who are hungry or malnourished throughout the world. As some have said: A person who is well fed can have many problems. A person who is hungry has but one problem. Unless we maximize technology and new practices, production will continue to overtax the world's natural resources.

"Many people legitimately have raised concerns regarding new diseases and pests and related food safety issues. And they are growing. The leading competitiveness of our U.S. producers is only as solid as our willingness to invest in forward-looking investments and build upon our historic successes.

"Now, we also know from past experience that with new technology the doors are being opened to novel new uses of renewable agricultural products in the fields of energy, medicine, and industrial products. In the future, we can make our farm fields and farm animals factories for everyday products, fuels, and medicines in a way that is efficient and better preserves our natural resources. Advances in the life sciences have come about, such as genetics, proteomics, and cell and molecular biology. They are providing the base for new and continuing agricultural innovations.

> "Unless we maximize technology and new practices, production will continue to overtax the world's natural resources."

"It was only about a dozen years ago that farmers in Missouri came to me to tell me about the potential that genetic engineering and plant biotechnology had for improving the production of food, and doing so with less impact on the environment, providing more nutritious food. Since that time, I have had a wonderful, continuing education, not in how it works but what it can do.

"We know now, for example, that in hungry areas of the world as many as half a million children go blind from vitamin A deficiency, and maybe a million die from vitamin A deficiency. Well, through plant biotechnology, the International Rice Research Institute in the Philippines has developed Golden Rice, taking a gene from the sunflower, a beta-carotene gene, and they enrich the rice. The Golden Rice now has that vitamin A, and that is going to make a significant difference in dealing with malnutrition.

"We also know that in many areas of the world, where agricultural production has overtaxed the land, where drought has cut the production, where virus has plagued production, the way we can make farmers self-sufficient, where we can restore the farm economy in many of these countries, is through plant biotechnology.

"But this is just the beginning. This legislation I am introducing today is a discussion draft which I hope is going to lay the foundation for tremendous advances in the future.

"This legislation stems from findings and recommendations produced by a distinguished group of scientists working on the Agricultural Research, Economics and Education Task Force, which I was honored to be able to include in the 2002 farm bill. The distinguished task force was led by Dr. **William H. Danforth**. . . . I extend my congratulations and my sincere gratitude to Dr. Danforth and his team for providing the basis and the roadmap to ensure we have the mechanisms in place to solve the problems and capitalize on the opportunities in agricultural research. The

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full report of the task force can be found at www.ars.usda.gov/research.htm.

"In summary, that study concludes that it is absolutely necessary we reinvigorate and forward focus our technology to meet the responsibilities of our time. New investment is critical for the world's consumers, the protection of our natural resources, the standard of living for Americans who labor in rural America, and for the well-being of the hungry people and the needy people throughout the world.

"I look forward to pursuing this vision in the 109th Congress. I invite my colleagues who are interested in science and research to review this report, to look at this measure, to join with me and my cosponsors in the next session of Congress to talk about moving forward on what I think will be a tremendous opportunity to improve agriculture and its benefits to all our populations.

"Madam President, this, I hope, will be the start of something really big. So, with that, I send the draft of the legislation to the desk."

The bill is titled the National Food and Agricultural Science Act of 2004.

The ASPB Committee on Public Affairs and leadership have reviewed the report on the National Institute for Food and Agriculture and have confirmed its support for this initiative. ASPB is working with other science societies, food commodity groups, and universities in support of this effort.

Future ASPB Annual Meeting Sites

2005: Seattle, Washington
July 16–20
Washington State
Convention & Trade Center

2006: Boston, Massachusetts
August 5–9
Hynes Convention Center

For more information go to
http://www.aspb.org/meetings/.

ASPB Develops Research Success Profile Brochure with National C-FAR on Inactivating Food Allergens

Shown here is the most recent brochure (Research Success Profile) distributed to congressional offices by the National Coalition for Food and Agricultural Research (National C-FAR). For the first time, the customary Capitol Hill distribution of a National C-FAR Agricultural Research Success Profile has also been sent to food and agriculture media via a transmittal e-mail. The ASPB Public Affairs Office developed the success profile based on the wheat and milk allergen research conducted by ASPB members **Bob Buchanan** and **Peggy Lemaux,** both of the University of California at Berkeley. We appreciate their contributions and those of the Committee on Public Affairs and National C-FAR in developing the brochure.

Fighting Allergies

Making foods safer for millions

A food allergy is an abnormal response to a food triggered by the immune system. Food allergies plague some 8 percent of children and 2 percent of adults worldwide. More than 90 percent of food allergic reactions are produced from consuming wheat, milk, eggs, peanuts, tree nuts, soybeans, fish and shellfish. Symptoms range from aggravating to life-threatening.

Thanks to federal support for basic research, scientists have found ways in the laboratory to inactivate dangerous allergens in foods. For example, University of California, Berkeley plant scientists have used thioredoxin, a naturally occurring protein found in all living cells, to change the shape of allergen proteins in wheat and milk, rendering them less allergenic.

Thanks to science, wheat, milk, and many other dietary staples may soon be safer for consumers, and hypoallergenic feed and food products could become a high-value commodity for the agricultural industry.

What's making possible the scientists' efforts to combat food allergens? Public investment in food and agricultural research—investment that returns 48 percent per year on average.[1] *Now, that's a smart investment.*

For details, contact:
Brian Hyps, American Society of Plant Biologists
(301) 251-0560; bhyps@aspb.org
Tom Van Arsdall, National C-FAR Liaison
(540) 785-0949; tom@vanarsdall.com

1 While the estimated annual returns on public investment in agricultural research and extension vary from study to study, they average 48 percent. *A Meta-Analysis of Rates of Return to Agricultural R&D: Ex Pede Herculem?* International Food Policy Research Institute, Washington, DC, 20006.

To protect and serve ...
food and agricultural research

NATIONAL C-FAR

The National Coalition for Food and Agricultural Research
A nonprofit, nonpartisan coalition seeking to enhance food and agricultural research and education
Info on National C-FAR and other research success stories at www.ncfar.org

Reviewers Select *Mendel in the Kitchen* by Fedoroff


ASPB member Nina Fedoroff

ASPB member **Nina Fedoroff** and co-author **Nancy Brown** have been receiving favorable reviews on their book, *Mendel in the Kitchen: A Scientist's View of Genetically Modified Food.* A plant geneticist and molecular biologist, Fedoroff is a member of the faculty of Pennsylvania State University. She is a member of the National Academy of Sciences and is currently serving on the National Science Board. She teamed with Brown, a medievalist by training who has worked as a science writer since 1981.

Fedoroff explains in the book that plant biotechnology can help people become better stewards of the earth while permitting people to feed themselves and generations of children to come. The book makes clear that this new approach to agriculture holds the promise of being the most environmentally conservative way to increase our food supply.

Following are excerpts from some reviews of the book:

"A clearly written history of plant breeding that focuses on the new field of the genetic engineering of crops. [Fedoroff and Brown] emphasize the many contributions that genetically modified organisms (GMOs) now make toward increasing food supplies while at the same time raising the nutritional levels of some foods."

— *Science,* October 29, 2004

"Nina V. Fedoroff, a plant biologist, and her co-writer Nancy Marie Brown meticulously depict the past, present and future of genetics in agriculture. . . . The saga brings rationality to the controversy now haunting the newest, most precise and most predictable manifestation of genetic modification—gene-splicing."

— *Wall Street Journal,* November 11, 2004

"In an extremely accessible style, [Fedoroff and Brown] take readers through the basics of genetics and genetic engineering to demonstrate why they believe that the risks associated with this technology are trivial. They also contend that the use of modern molecular technology to insert genes from one species into another isn't very different from the hybrid crosses that agriculturalists have been doing for millennia."

— *Publishers Weekly,* September 13, 2004

"Finally, we hear from scientists in the public debate on genetically modified foods. . . . The authors respond to critics and shatter myths by explaining what genetic engineering is, the role it plays in crop improvement, and the successes and failures that have occurred along the way."

— *Library Journal,* October 15, 2004

"*Mendel in the Kitchen* is a highly readable and well documented account of the science, issues and people involved in the development of genetically engineered foods."

— ASPB member **Alan McHughen,** author of *Pandora's Picnic Basket*

ASPB member **Lou Sherman** of Purdue University noted that a favorable review of Fedoroff's book was also written in the *New York Times* by Henry Miller.

The book can be ordered or read at the following website of the National Academies Press: http://books.nap.edu/catalog/11000.html.

Important Dates in 2005

February 25
Mid-Atlantic Section Meeting
University of Maryland, College Park

February 28
Abstracts submission deadline for Plant Biology 2005

March 12–15
Southern Section Meeting
Greenville, South Carolina

March 18–19
Midwestern Section Meeting
St. Louis, Missouri

April 8–9
Mid-Atlantic Section Meeting
University of Maryland, College Park

April 15
Early registration cut-off for Plant Biology 2005

June 3–4
Northeastern Section Meeting
State University of New York at Binghamton

June 20
Housing cut-off for Plant Biology 2005

June 24
Last day to register for Plant Biology 2005

September
Mid-Atlantic Section Crab Feast
ASPB headquarters, Rockville, Maryland

October 12–16
Plant Genetics 2005
Snowbird, Utah

For more information on all ASPB events, visit http://www.aspb.org.

Bush Newspaper Commentary Cites Concerns with Process-Based Labeling of Foods

The Fort Collins Coloradoan *published a commentary December 4 regarding labeling of genetically modified foods, written by* ***Daniel Bush,*** *ASPB past president. The commentary responded to a writer who advocated process-based labeling of genetically modified foods in an earlier letter to the editor. Following is Bush's commentary.*

Labeling by Process Detracts from Usefulness

Topic: Food safety

By Daniel R. Bush

Daniel Bush

I am writing in response to Garry Auld's Nov. 30 Soapbox commentary on labeling genetically modified foods.

Auld argues for labeling food based on the process associated with its production rather than on content. This is a radical departure from food labeling up to now, which is designed to maximize useful information for consumers concerning what is in the food they are buying. I have no quarrel with the premise that consumers deserve to know what they're eating. However, labeling as promoted by Auld would not apply a scientifically sound and uniform standard that fully informs consumers of risks or even nutritional value. Labeling based on process instead of content detracts from the usefulness of content-based labeling.

As a plant scientist, I know that many of the technologies associated with biotechnology are actually superior to some traditional methods currently in use. For example, crosses of wild relatives into commercial species are often used to introduce desirable traits. Yet such crosses can carry far greater inherent risks than single-gene introductions associated with biotechnology because hundreds of new genes are transferred into the resulting hybrid.

Indeed, crosses between related species have been a major source of new varieties in most commercially important plants. Yet, those crosses result in large-scale exchange of genetic material that includes scores of genes and their expressed products. In contrast, biotechnology allows one to introduce a specific gene that confers a desirable trait, such as disease resistance. Because only one gene is altered, the product of that gene can be tested for toxicity and allergenicity, and if found to be safe, the gene can be introduced with substantially less risk than crosses with wild relatives that transfer scores of genes that are more likely to introduce unintended consequences.

In addition to my concern that labeling foods based on process rather than content misleads the public, it is important to point out that foods that are products of plant biotechnology undergo far more extensive safety review than other agricultural products. The U.S. Food and Drug Administration requires comprehensive safety tests on all genetically modified foods entering the marketplace. Based on the extensive testing mandated by the FDA, I expect these products to be safer than many items readily generated using "natural" methods.

The National Academy of Sciences in its 2000 report, "Genetically Modified Pest-Protected Plants: Science and Regulation," found no distinction existing between the health risk posed by plants genetically engineered through modern molecular techniques and those modified by conventional breeding practices. Likewise, the American Medical Association has stated that there is no scientific justification for special labeling of genetically modified foods, as a class.

Genetically modified foods have been shown to be safe and nutritious agricultural products. I urge your readers to resist calls for process-based labeling that are not founded on fundamental scientific principles.

Daniel R. Bush is chairman of the Department of Biology at Colorado State University.

> "Genetically modified foods have been shown to be safe and nutritious agricultural products."

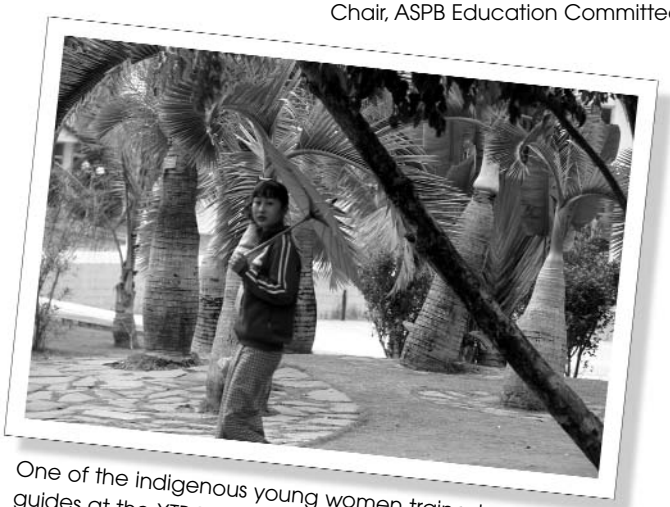
Note: Letters to the editor provide an excellent forum for public discussion of issues such as labeling of genetically engineered foods. ASPB members who write letters like this to local newspapers offer readers a credible source and explanation of plant science-related issues. Dan and past Committee on Public Affairs chair **Tom Sharkey** addressed the labeling issue on behalf of ASPB in 2002 in Oregon when voters there were considering a process-based mandatory labeling measure for modified foods that was subsequently rejected. For advice given to ASPB members by a newspaper editorial page editor on how to write and get your letters published, please visit http://www.aspb.org/publicaffairs/editorial/editor.cfm.

This submission illustrates how other countries are approaching public understanding of plant science. The Xishuangbanna Tropical Botanical Garden (XTBG), like some of our major botanical gardens, has a cadre of dozens of scientists conducting research on modern plant molecular biology, biochemistry, ecology, and systematics. Through tourism and multimedia outreach, XTBG brings rainforest plant science to the public. The effectiveness of the outreach is being assessed in partnership with the program in science education in the Information Technology in Science (ITS) Center for Teaching and Learning (http://its.tamu.edu) at Texas A&M University.

—L. R. Griffing
Chair, ASPB Education Committee

Public Science Education at the Xishuangbanna Tropical Botanical Garden

By H. X. Zhou, Chief, Education Section



One of the indigenous young women trained as tour guides at the XTBG.

Located on the gourd-shaped peninsula surrounded by the Luosuo River, a branch river of the Mekong River in Xishuangbanna Dai Autonomous Prefecture of Yunnan Province, the Xishuangbanna Tropical Botanical Garden (XTBG) is recognized as China's largest botanical garden with the most abundant diversity of plants. Founded by China's famous botanist Professor Cai Xitao, the garden has grown into an institute integrating scientific research, biological conservation, public science education, ecological tourism, and the development of science and technology (http://www.xtbg.ac.cn/english/Research.htm).

One major task of public education at XTBG is to enhance public concern about biodiversity conservation. XTBG has collected more than 10,000 species of tropical plants from China and other countries. Collections were arranged based on several principles, such as ecological features, economic uses, and taxonomic groups. Most collection-displays have incorporated landscape design as well as educational components so as to make the collections attractive to visitors. Regardless of XTBG's relatively inaccessible location, the garden receives about 400,000 visitors each year.

The area in which the garden is located has very rich cultural diversity. Xishuangbanna has 13 minority groups, including Dai, Han, Hani, Bulang, Jinuo, and Yao, with the Dai people accounting for one-third of the population. Most of the indigenous people live on fishing, hunting, and picking in the rainforest and have therefore accumulated a rich body of knowledge on plant resource use and on how to adapt to the local environment. One feature of XTBG's innovation in public science education is to explain and demonstrate the ethnobotanical knowledge, so as to stimulate visitors who live in this changed modern society to re-think their behavior and attitude toward nature. A museum that deals primarily with tropical rainforest species and ethnobotany has therefore been established inside the garden.

XTBG covers 900 hectares, with 300 hectares open to the public for ecological tours and science education. To better guide tourists and to more effectively combine the spread of knowledge on biodiversity conservation with understanding of local cultures, XTBG established a team of 80 young tourist guides recruited from local minority groups. This well-trained team has played an important part in the public science education of XTBG. The tourist guides earn a living while sharing their native understanding of local cultures, allowing them to connect their plant-relevant knowledge with the public and their native families.

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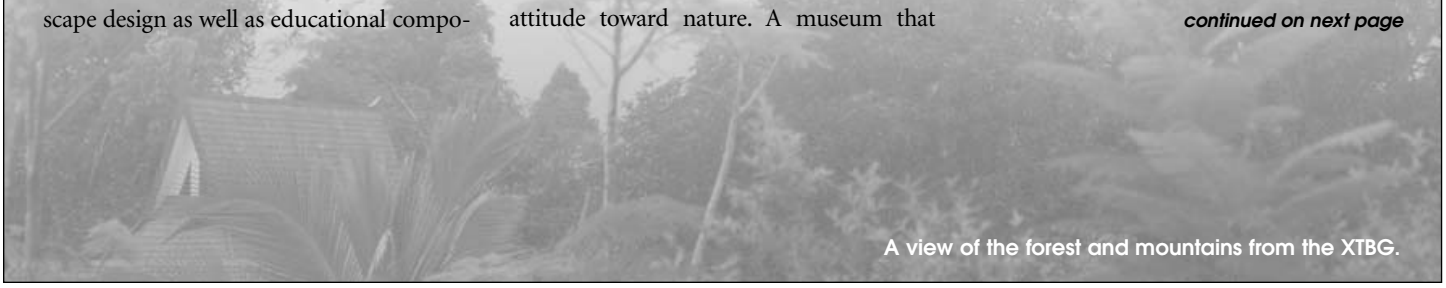

A view of the forest and mountains from the XTBG.

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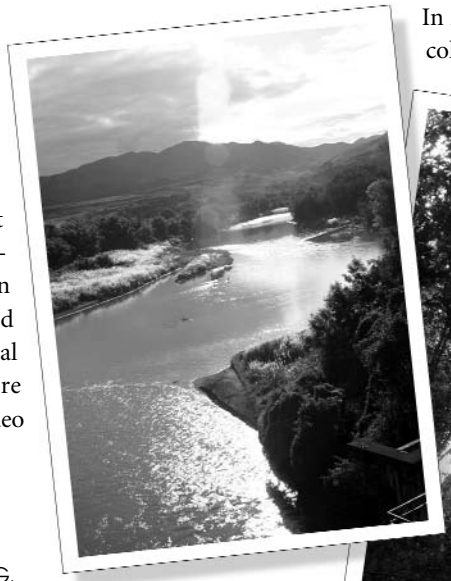
XTBG provides outreach for our scientists at several different levels in order to get more people to understand the importance of biodiversity and ecology conservation, as well as to recognize and respect the excellence of local forest cultures. Public science education is not only pursued through our museum and tours, but also with modern media technologies. A dozen television programs have been produced and shown on both national and provincial channels. There also are two well-received video CDs, the presentation "Approaching the Rainforest," and a book titled *A Ramble in the Rainforest: Interesting Stories About Our National Forest Cultures.* In 2001, XTBG started collaborating with the Virtual Science Museums of China (VSMC). XTBG initiated China's first "On-line Virtual Botanical Garden" on VSMC and set up web pages for public science education on the XTBG website (http://www.kepu.net.cn/english/banna/index_fh.html). Using the Internet has offered more people easy access to rainforest plants, botany, and ecology.

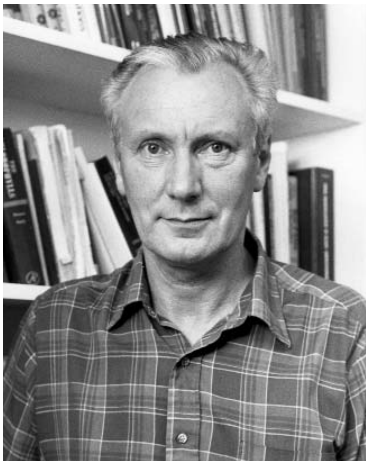
Apart from knowledge of science, the public also has a desire to understand the process of research. The scientists at XTBG each give lectures to the public for at least one day each year. Through the face-to-face interaction, the XTBG scientists use their scientific vision to help inspire the public—especially young students, who are the plant scientists of tomorrow.



Right: A view of the Luosuo River, which encircles the XTBG.

Far right: One of the rainforest towers used for research and to monitor the rainforest environment at the XTBG.

John Biggins



John Biggins, professor of biology emeritus at Brown University and a well-known member of the photosynthesis research community, passed away on September 14, 2004. He suffered a heart attack and did not survive emergency surgery.

John was born on March 30, 1936, in Sheffield, England. After attending grade school in Sheffield, he served in the British Army from 1954 to 1956, where, among other duties, he supervised a munitions decommissioning unit. This experience would serve him well in future encounters with Introductory Biochemistry students. John did his undergraduate studies at University College, London, from which he received his B.Sc. in 1960. While an undergraduate, John became interested in photosynthesis after seeing an exhibit at the World's Fair in Brussels, and following his graduation he enrolled as a graduate student in the Laboratory of Chemical Biodynamics, headed by Melvin Calvin, at the University of California, Berkeley. He received his Ph.D. in plant physiology in 1965, under the guidance of Rod Park and Ken Sauer. John's Ph.D. thesis, titled "Studies on the Structure and Photochemistry of Chloroplast Lamellae," drew a lot of notice, and the results were published in two prominent first-author papers, one appearing in *Science* in 1963 and the other in *Nature* in 1964. The attention from this work also garnered John a tenure-track assistant professorship at the University of Pennsylvania in 1965, directly out of graduate school and completely bypassing the usual postdoctorate career stage.

At Penn, John set up his lab and pursued independent research in the areas of respiratory and photosynthetic electron transport in cyanobacteria. He was promoted to associate professor in 1969.

While a graduate student at Berkeley, John met his future wife, Cathy Miller, and they were married in 1963. Trying to start a family in urban Philadelphia led to certain dissatisfactions with the inconveniences of city life in general and Philadelphia in particular. After his promotion at Penn, John took a sabbatical leave in 1969 back in Ken Sauer's lab at Berkeley. When John and Cathy left Philadelphia and headed west, with one daughter in tow and another one on the way, it was their fond hope that they would not be returning to the East. As it turned out, their plans changed when John accepted a position on the faculty of Brown University as associate professor of biology in 1970. John became a naturalized U.S. citizen in 1976, and he spent the remainder of his scientific career at Brown University. He was promoted to professor in 1977 and appointed the G. D. Eggleston Professor of Biochemistry in 1990. He served as chair of the Section of Biochemistry in the Division of Biology and Medicine at Brown from 1985 to 1993.

John's research at Brown encompassed a wide range of topics within the "light reactions" side of photosynthesis. A paper published in 1974 was among the earliest to suggest a role for plastoquinone in photosynthetic cyclic electron transport, a role that has recently been established. John fearlessly employed exotic spectroscopic techniques, including rapid-scanning acousto-optic filtering and linear dichroism of magneto-oriented and stretched film–oriented thylakoids, to understand how thylakoid membrane components respond to light activation. Eventually, this led to an interest in the mechanisms of photosynthetic state transitions, and he used picosecond fluorescence excitation and time-resolved emission spectroscopy to determine the excitation pathway in antenna systems of cyanobacteria, red algae, and cryptophytes. This work established that state transitions in phycobilisome-containing organisms occur by fundamentally different mechanisms from those that operate in plants and green algae.

From 1986 to 1987, John spent a sabbatical year as a Fogarty International Fellow in the laboratory of Pierre Sétif at CNRS in Gif, France, where he embarked on another project, this time to determine the role of vitamin K1 in photosystem I. The results indicated that vitamin K1 has an important role as an early secondary electron acceptor in photosystem I, but it is not the primary acceptor. These experiments involved disassembly and reconstitution of the A1 acceptor site with various vitamin K–like quinones. The experiments on in vitro reconstitution of components on the acceptor side of photosystem I led to an interest in downstream electron acceptors that contain Fe/S clusters. John mastered the art of reconstituting Fe/S clusters in vitro, which enabled him to perform experiments to characterize the interaction of the F_AF_B-containing PsaC subunit with the F_X-containing PsaAB core heterodimer. The interpretation of the results of these experiments led to predictions about how these proteins interact that anticipated the findings obtained from the recent determination of the photosystem I structure by X-ray crystallography.

Throughout his career, John maintained an active, competitive grant-supported research laboratory of a deliberately limited size so that he could have the time and opportunity to do bench work himself. His students and postdocs were few but well trained and productive. John always knew exactly what was happening in his lab, and he was always able to step in and do experiments himself, whether the procedures involved algal cell growth, enzyme characterization, spectroscopy, gene cloning, or in vitro mutagenesis and protein engineering. As a result of his intimate involvement with these experiments, the published results emanating from John's lab were uniformly trustworthy and reliable.

John served the photosynthesis community in many ways. He was a member of several NSF and USDA grant panels and was program manager for the USDA panel on photosynthesis in 1983. John was co-organizer of the ASPP annual meeting in 1985, which was held on the Brown campus, and was congress secretariat for the VII International Congress on Photosynthesis, which was also held at Brown, in 1986. He was a founder of

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Tony Bleecker

Anthony (Tony) B. Bleecker died at the age of 54 on January 30, 2005, after a brave fight against cancer. He was a professor of botany and genetics and a former chair of the Botany Department at the University of Wisconsin–Madison. Born and raised in suburban Detroit, Tony began his college education at Oakland University in Michigan, transferring from there to the University of South Florida, where he earned his bachelor's and master's degrees in botany, with a thesis in natural products chemistry.

In 1982, Tony moved to the Plant Research Laboratory (PRL) at Michigan State University and decided to pursue his Ph.D. studies in the laboratory of Hans Kende. It was there that Tony started to make seminal discoveries on how plants synthesize and sense ethylene. He raised monoclonal antibodies against the ethylene-biosynthetic enzyme ACC synthase and was the first to identify this enzyme on gels and to purify it (1). To elucidate ethylene signaling, Tony designed the seedling screen for ethylene response mutants of Arabidopsis and identified and described the *ETR1* gene (2), which as he and coworkers later showed, encodes an ethylene receptor (3, 4). In these early days of his research career, Tony already exhibited the traits that enabled him to probe ever deeper into the question of ethylene action: a capacity to define the important problems that needed resolving and to choose incisive and critical methods to do so. He was also exemplary in demonstrating how generosity and cooperation can drive progress in research from which the whole field profits. He offered his ACC-synthase antibodies to all workers in ethylene research and collaborated with five research groups at the PRL and one at the University of Michigan, which resulted in publications with six faculty members other than his thesis adviser. Tony received his Ph.D. in 1987 and applied to Elliot Meyerowitz's laboratory at Caltech with a plan to clone the *ETR1* gene, using the methods being developed there for chromosome walking.

Tony moved to Caltech in February 1988 and, working in partnership with Caren Chang, set out to clone the *ETR1* gene, first at Caltech and later in continued collaboration with Caren and others at Caltech after he had left for the University of Wisconsin (3). Tony's expertise in ethylene physiology and genetics and Caren's artistry in molecular genetics and cloning yielded results of major significance. First, the ETR1 protein was shown to be a likely ethylene receptor with a hydrophobic domain that contained, presumably, the ethylene binding site and another domain related to bacterial two-component receptor histidine kinases that could function in ethylene signaling. Second, such a two-component receptor, up to then thought to occur only in prokaryotes, was now identified in a eukaryote, a finding confirmed within weeks by the molecular cloning of a two-component receptor in yeast by Varshavsky's group at Caltech. Tony and Caren, along with other members of the Bleecker and Meyerowitz labs, made another discovery as they chromosome-walked to the *ETR1* gene. They cloned a gene that encodes a leucine-rich repeat transmembrane receptor kinase (*TMK1*), the first recognized and published member of this now well-studied and very large family of plant receptors (5).

Tony Bleecker at his favorite pastime: sailing off the coast of Crete in 2004. Photo by Alan Jones.

Tony assumed an assistant professorship in the Department of Botany at the University of Wisconsin–Madison in 1989. He focused his research program mainly on answering the major outstanding questions about how ETR1 transduced ethylene signals and on determining the biological function of the TMK1 receptor kinase. In a landmark paper, Tony and Eric Schaller showed that ETR1, expressed in yeast, had the capacity to bind ethylene and that the *etr1* mutation abolished this binding (4). They concluded that ETR1 acts as an ethylene receptor in Arabidopsis. Although numerous investigators had attempted to identify plant hormone receptors, it was Tony and his coworkers who were the first to succeed in this task. In a series of elegant biochemical studies, Tony's group demonstrated that dimers of the membrane-spanning domains of ETR1, held together by disulfide bonds, bound ethylene in their membrane-spanning domain, and they resolved the question of how any protein could bind a structurally featureless gas, such as ethylene, as tightly as ETR1 does. They demonstrated that cysteine residues held a copper (II) atom in the ethylene binding site. Transition metal ions interact with the pi electrons of olefins, and this appears to be the mechanism for ethylene binding by ETR1. Good progress was also made toward understanding the biological roles of TMK1 and its homologs. By knocking out combinations of four members of the *TMK1* clade, Tony's group demonstrated that these receptor kinases are needed for cell expansion, auxin responses, and cell division in emerging leaves. A beautiful set of molecular, genetic, and kinematic studies that lay out a fundamental role for these receptors in plant development is being assembled by Tony's students and colleagues. The hardest task will be to present these important results with the insight and clarity for which Tony will always be remembered. At MSU, Caltech, and the University of Wisconsin, Tony fearlessly followed the research trail, making major discoveries and productively and joyously interacting with his colleagues.

Besides being an outstanding researcher, Tony was greatly appreciated for his dedication and excellence in teaching and in mentoring graduate students and postdocs, some of whom have moved on to promising careers

of their own. Tony is survived by his wife, Sara Patterson, also a faculty member at the University of Wisconsin, and by three daughters, a son, and two grandchildren.

Hans Kende
Michigan State University

Elliot Meyerowitz
California Institute of Technology

Edgar Spalding
University of Wisconsin

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John Biggins, continued from page 25

the Eastern Regional Photosynthesis Conference, which has been held at the Marine Biology Laboratory every spring since 1983.

John chose to retire early from Brown in 1998, at the age of 62, while still healthy and vigorous. By that time, both of his daughters, Sue and Ann, were out of the house and on their own. John and Cathy moved to the Sonoma County wine-making region of California and built a house in the hills overlooking the Alexander Valley. There John started a new "career" as home-scale grape grower and winemaker. He was enthusiastically accepted by the local winery establishment, in part because he could lucidly explain to them what was going on both in the vineyards and in the wine barrels, using his considerable experience in teaching microbiology, biochemistry, and plant physiology to undergraduates. In 2003, John returned to the East Coast for a too-short visit, during which he presented a delightful and informative seminar at the 20th Eastern Regional Photosynthesis Conference titled "Field Photosynthesis in California: From Vines to Wine," followed by a lab practicum (wine tasting) using materials supplied by several Sonoma County wineries.

It is not easy to convey what made John so endearing. He had a reserved and somewhat crusty public demeanor, but it soon became apparent to everyone that this was a pretense, and underneath was a warm, friendly, and generous soul. In the classroom, John could make biochemistry exciting to even the most myopic premed students by using examples from within their restricted range of interests to illustrate the subtleties of metabolic regulation and energy metabolism. He was always willing to spend time with students to help them learn the material, but he had little patience for requests to regrade exams. He took departmental and university service duties seriously and always put in the time to make sure the job was done right. Above all, John was a patient and effective mentor. I am one of many colleagues who benefited greatly as a junior faculty member from his understated but sage advice, gentle guidance, and the example he set.

John is survived by his wife and daughters, two grandchildren, and a brother. His passing took us all by surprise. He had a lot of good years left, and he is sorely missed.

Sam Beale
Brown University

NIH Announces Plan on Enhanced Public Access

NIH director Elias Zerhouni announced the agency's plan for enhanced public access to the scientific literature on February 3, 2005. (See the November/December 2004 issue of the *ASPB News* for full background information on the NIH plan.) The plan, which can be viewed online at http://grants1.nih.gov/grants/guide/notice-files/NOT-OD-05-022.html, will become effective May 2, 2005. It will request, not require, authors whose research was funded in whole or in part by NIH to submit their final accepted manuscript (i.e., the version of the manuscript that has been peer-reviewed, though not yet published in final form) to PubMed Central as soon as possible, but within 12 months of the date of publication of the article. The 12-month period is a concession by NIH from the original proposal, which stated six months, and is considered much more palatable by many publishers in terms of the potential impact on library subscriptions. Zerhouni was quoted in a January 21 article in the *Washington FAX* as saying that "The fundamental breakthrough of this policy is. . . not the timing, it's the fact that we're creating for the first time the precedent and the right for a federal agency to have a venue or pathway for its scientists to publish and give access to the public." This statement prompted many publishers to reiterate their concerns regarding the implications of the plan for U.S. copyright law. The DC Principles Coalition, of which ASPB is a member, has been very active in representing society publishers throughout the debate with NIH. ASPB staff are actively involved in the discussions of the coalition and in formulating the coalition's responses and strategies.

NIH's press release can be found in its entirety at http://www.nih.gov/news/pr/feb2005/od-03.htm. The response of the DC Principles Coalition, which calls the NIH plan "wasteful of federal research dollars and a missed opportunity to take advantage of available technology and existing efforts," can be found at http://www.dcprinciples.org/nih_rule.htm.

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