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ASPB News

THE NEWSLETTER OF THE AMERICAN SOCIETY OF PLANT BIOLOGISTS

PB20
PLANT BIOLOGY
JULY 25–29 • WASHINGTON, DC

Planning Plant Biology 2020

BY LAURA KLASEK
University of California, Davis

"The people I have met have been extraordinarily qualified. Their intent is good. Their commitment is true."
—The West Wing

The Washington Monument spears the blue fall sky; the Jefferson Memorial, covered in spiky scaffolding, looks like a hedgehog; the Capitol rotunda peeks between office buildings. Traffic backs up at an intersection near the Lincoln Memorial, and then my cab breaks free and deposits me a few

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President's Letter

The Transparency Project: Episode 2

BY JUDY CALLIS
ASPB President, University of California, Davis

Continuing our transparency project, in this President's Letter I discuss a proposal for a new name and mission statement for one of our standing committees, the Minority Affairs Committee (MAC), and highlight the activities of another standing committee, the Women in Plant Biology (WIPB) Committee.

Minority Affairs Committee

Our standing committees work hard to identify activities relevant to their missions and provide services for our members and, in some cases, the public. It is natural that both the mission and activities can, and in fact should, evolve over time. In the past year, MAC (https://aspb.org/about/committees/#toggle-id-8) has been engaged in internal discussions and in conversations with membership and leadership aimed at identifying current issues it wishes to address and renewing the committee's focus on activities that promote diversity and inclusion in our Society and at our sponsored meetings. MAC chair Gustavo MacIntosh (Iowa State University) is leading the discussion.

MAC is proposing to broaden its mission to promote diversity and inclusion in our community across multiple facets, including (but not exclusively) ethnicity, age, gender, sexual orientation, ability, and religious affiliation. In addition, the proposed changes include a name change from MAC to the Equity, Diversity, and Inclusion Committee. Future activities will include workshops and development of information to educate us about implicit biases and increase our

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Contents

The *ASPB News* is distributed to all ASPB members and is also available online. It is published six times annually in odd-numbered months. Its purposes are to keep membership informed of ASPB activities and to reinforce the value of membership. The *ASPB News* is edited and produced by ASPB staff from material provided by members and other interested parties.

Copy deadline is the 5th day of the preceding even-numbered month (for example, April 5 for May/June publication).

Contact: Nancy A. Winchester, Editor, *ASPB News*, 15501 Monona Drive, Rockville, MD 20855-2768 USA; nancyw@aspb.org; 301-296-0904.

ASPB Legacy Society

ASPB founded the Legacy Society in 2017 with the goal of increasing financial support for the good works and professional development activities of ASPB, including education and outreach, membership engagement and expansion, and the development of future generations of plant biologists. To inaugurate the Legacy Society, long-standing ASPB members who served the Society in a variety of ways, particularly in leadership, service, and research activities, were invited to become Founding Members by making a donation of $5,000. By the end of 2019, 150 individuals had elected to become a Founding Member.

To acquaint the membership with the Founding Members, we are publishing short biographical descriptions in which they answer the following questions:

- How have you spent your career?
- What do you consider your most important contribution to plant science?
- When did you become a member of ASPP or ASPB?
- How did the Society influence your career, and what was your motivation for becoming a Founding Member of the Legacy Society?
- What important advice would you give to individuals at the start of their career in plant science? We think you will find their answers interesting and illuminating (https://aspb.org/founding-legacy-society-members/).

In anticipation of the 100th anniversary of the Society in 2024, the Legacy Society is planning a variety of activities to increase ASPB's endowment through the Centennial Challenge. Details will be announced at Plant Biology 2020. ■

PRESIDENT'S LETTER
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awareness of the viewpoints and challenges faced by people who identify with these communities. The objective is to determine what ASPB can do to be more inclusive as a professional society.

Finally, the committee wants a mechanism to assess the impact of its activities to identify those that have positive outcomes relative to its mission; self-assessment is essential for remaining relevant and improving or modifying activities. The current MAC looks forward to working with other standing committees to coordinate activities where there are shared or overlapping missions.

The next steps will be to develop a specific mission statement; to propose the changes in name, mission, and activities (both generally and for Plant Biology 2020) to the Council for incorporation in the Society's bylaws and constitution; and finally to obtain membership approval.

We welcome your comments. To submit comments, please email info@aspb.org and enter "MAC proposal feedback" in the subject line.

Women in Plant Biology Committee

I would also like to highlight the activities of the WIPB standing committee (current members are listed at https://aspb.org/about/committees/#toggle-id-13):

- Meet the current chair, Laura Wayne, and hear about WIPB in a short video (https://vimeo.com/37743716).
- Check out the Women in Plant Biology Network hosted by WIPB on Plantae at https://community.plantae.org/organization/women-in-plant-biology/dashboard. View past webinars at this site, and keep going back to it for new ones in the future. Also see Eva Farre's page highlighting notable women scientists.
- Follow WIPB's activities on Twitter @ASPB_WIPB.

WIPB has linked to the Plantae Mentoring Center (https://jobs.plantae.org/eMentor/). If you want to give back, please sign up to be a mentor. If you're looking for a mentor, check out this resource.

Other Transparency News

Two ad hoc committees have been formed and are busy. One is examining the nominations process, and the other is working to develop a Society code of conduct, building on a AAAS consortium developing such documents. ASPB is a founding member of this consortium, so we plan to use the efforts of this group to produce an ASPB-centric document.

Nominations

Just a reminder that nominations for elected positions close on February 12th. Nominations for ASPB awards close on February 19th, so submit your nominations soon. We are accepting nominations for president-elect and secretary-elect. In both positions, after one year, the incumbent transitions to president and secretary, respectively. Feel free to self-nominate or ask a colleague to nominate you! (I have it on good authority that self-nomination is a real thing.) ■

Plant Biology 2020

July 25–29 | Washington, DC

From grad students to professionals with 20+ years of experience in plant biology, participants view the annual Plant Biology conference as a premier science event because of its perfect blend of research, education, and networking opportunities. In Washington, DC, we expect more than 1,500 scientists from nearly 50 countries to participate in the meeting.

PB20

PLANT BIOLOGY

JULY 25–29 • WASHINGTON, DC

Marriott Wardman Park
2660 Woodley Rd NW – Washington, DC 20008
plantbiology2020.aspb.org

Early Bird Registration closes April 17, 2020

Abstract Deadlines & Details

All abstract deadlines are at 11:59 p.m. EST on the dates listed below:

February 20, 2020

Deadline to be considered for a concurrent symposium talk, including a lightning talk.

June 15, 2020

Deadline for poster presentations to receive a poster number. Abstract must be completed and the primary poster presenter must be registered for the conference by this date.

July 17, 2020

Deadline for poster abstract submissions to be included in the meeting app. Posters will not receive a poster number and spots are irst come, irst served. Primary poster presenters must be registered for the conference. This will be the LAST DAY to submit an abstract.

https://plantbiology.aspb.org/abstract-deadlines-details/

PLANNING PLANT BIOLOGY 2020
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miles up the Potomac River at the Washington Marriott Wardman Park, site of Plant Biology 2020. It's the first weekend in November, and the Wardman Park is hosting hundreds of costumed attendees for Anime USA.

Two weeks earlier, I had received an email welcoming me as the early career representative on ASPB's Program Committee, which is responsible for planning and executing the annual meeting, and now I'm on-site in DC for the committee's 36-hour fall planning marathon. I've attended exactly two Plant Biology meetings in my life, PB18 in Montreal, Quebec, and PB19 in San Jose, California. I am not published, I am not a leader in my field, and I am now representing the undergraduates, grad students, and postdocs who make up 40% to 50% of Plant Biology meeting attendees each year.

(So no pressure.)

A process story, as I learned from the political drama *The West Wing,* tells how something happens: how fictional president Jed Bartlet gets reelected, how the sausage gets made. To ASPB members, especially young members like me, the annual meeting arises from a black box: we input abstracts, we get out a four-day science and networking binge. Introduce a scientist to a black box, though, and we want to crack it open, examine it, make sense of it.

The Program Committee consists of professional scientists, ASPB and conference staff, and ASPB leadership. The professional scientists, drawn from academia and industry, are experts in a dizzying variety of fields. ASPB staff members Jean Rosenberg and Maddie Grant, and Erica Platner, conference director at Conference Managers, coordinate the site, the budget, the app, the marketing, and the million details that make the meeting come to life. ASPB President-elect Maureen McCann and CEO Crispin Taylor connect the committee to ASPB's broader mission. I first meet everyone in the hotel lobby, picking them out from Anime USA attendees by their lack of costumes. Introducing myself requires battling back imposter syndrome, but I shouldn't have been anxious: my welcome is immediate, enthusiastic, and tinged with relief. "We've needed an early career person for so long," I'm told, "and now we've got one!"

Over the course of nine straight hours on Saturday and four hours on Sunday, we turn an outline sketched out in San Jose into the vasculature for the upcoming meeting. We firm up topics and organizers for plenary symposia (major symposia, now renamed), we review workshop proposals, and we begin the herculean task of crafting concurrent symposia. Feedback from PB19 feeds forward into the plan for PB20: we pore over the survey, and we rehash discussions from the Town Hall. For instance, the survey gave mixed endorsement to the e-posters debuted in San Jose. E-posters were a necessary experiment with a developing presentation format and, it turns out, a practical way to fit posters into the San Jose Convention Center in a cost-efficient manner. At PB20, we won't have the same e-poster software or physical stations, but we don't want to skip the format entirely because it's still strategically important.

"Could we just get a bunch of iPads?"

"Maybe a few stations."

"A handful of bigger screens?"

Ideas ricochet around the U-shaped conference table, refining down to (1) an opt-in online poster gallery and (2) a vehicle for two- to three-minute oral poster presentations for early career researchers in hour-long sessions, housed in a designated area with a nice, big screen.

It takes time to find my footing within this torrent of planning, but Jean and fellow committee member Phil Taylor keep an eye on my facial expression and draw me into the conversation. (When you meet me at PB20, you'll rapidly discover that my face always gives me away when I have a thought to express.) And then, when someone mentions that the dinner meet-up sign is a great way for first-time attendees to make those nebulous but crucial evening networking connections, I can't help but interject. In Montreal, I stood by that sign, watching large groups of people head out to dinner, debating whether or not I still had the extrovert energy to force my way into a group of strangers who clearly already had a plan, and deciding that no, no way, that was far too intimidating. That story prompts discussion of more structured ways to facilitate first-time attendees' evening networking, building on PB19's efforts to nurture that attendee cohort from the moment they arrive on-site.

We spend more than an hour Sunday morning testing the abstract submission system, which is the same system used for PB18. It has an aggravating inability to port your information from your abstract presenter profile to your registration attendee profile. However, this system does not—knock on wood—crash and delete your data the way PB19's did. (There is a reason we're switching back to the 2018 vendor.) We streamline the form as much as possible, with

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my contributions filtered through the lens of "What information would I never be able to find when submitting this at 11:30 the night before the deadline?" To continuing ongoing efforts to combat bias and ensure balance among each symposium's speakers, the submission will collect gender and ethnicity data and ask whether the research comes from a primarily undergraduate institution (PUI). The definition of a PUI on PB19's form engendered confusion, so to clarify, the ASPB PUI Section leadership rephrased it thus: "PUIs are U.S. institutions that grant baccalaureate degrees and award fewer than 10 PhDs per year in all NSF-supported disciplines."

In fact, ensuring that PB20 content will represent the entire ASPB community in all its diversity is an ever-present consideration. We need organizers for plenary symposia, and 12 of 30 concurrent symposia have invited chairs who help recruit for talks in topic areas of special interest. While committee members toss out names I recognize from my personal hall of fame of guest seminar speakers, *The Plant Cell* authors, and plant biology rock stars, Maureen McCann unobtrusively suggests solely female and international scientists. Every person in the room issues a reminder at some point, to us and to pass along to the plenary symposium organizers, to feature early and midcareer scientists. The overall mission for the annual meeting, paraphrased somewhere around hour 5 on Saturday, is to inspire by featuring the best cutting-edge science and to nurture the development of our members.

The White House is two Metro stops and two blocks away from the conference site, as we discover by accident after dinner. It's lit up not only by its own lighting but also by the glowing signs of enthusiastic protesters singing rewritten Bruno Mars lyrics. The workshops, panels, and symposia about science policy planned for PB20 take as much advantage of the setting as we do in our moment as tourists. In hour 11, we get sidetracked from discussing these policy features to travel down an alliterative rabbit hole:

"Plants, people, and policy."

"Or maybe, 'Policy, people, and plants'?"

"Plants, policy, and people. Plants are what bring us together, policy is what we're featuring, and people—this is our home base, professionally; it's where our people are."

In just six short months, 1,500 plant biologists will descend upon DC. Bringing our plant people together requires an astounding amount of work, and it is a process that I feel privileged to witness from the inside, let alone participate in. As the months pass and the meeting takes shape, I will keep you up-to-date on the process story so that when PB20 arrives on July 25, 2020, it will still be your favorite yearly four-day science and networking binge … and hopefully just a little bit less of a black box. ■

Research Experiences for Undergraduates program students filming an episode about a day in the life of a summer intern for Science IRL with Molly Edwards (https://youtu.be/rCRqGvAcyNo).

ASPB Members Elected to the 2019 Class of AAAS Fellows

Eleven members of the ASPB community were elected to the 2019 class of AAAS fellows. Each year, the AAAS Council elects fellows based on their contributions to science and technology in the areas of research; teaching; technology; services to professional societies; administration in academe, industry, and government; and communicating and interpreting science to the public. Fellows are recognized from among AAAS members "whose efforts on behalf of the advancement of science or its applications are scientifically or socially distinguished." New fellows will be honored with a certificate and a blue and gold rosette to symbolize their distinguished achievements at the 2020 AAAS annual meeting.

Nominations for the 2020 AAAS fellows awards will be accepted until April 29, 2020. Please visit http://www.aaas.org/current-nomination-cycle to view the nominating requirements and procedures. ■

Congratulations to the following ASPB members:

Lisa Ainsworth
USDA–ARS/University of Illinois at Urbana–Champaign

Edgar B. Cahoon
University of Nebraska–Lincoln

Kanwarpal Singh Dhugga
International Center for Maize and Wheat Improvement (CIMMYT)

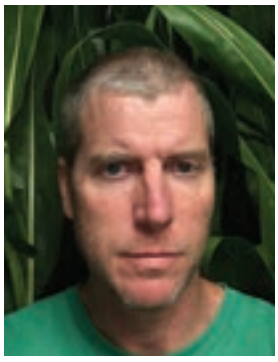
Dirk Inze
VIB–UGent Center for Plant Systems Biology/Ghent University (Belgium)

Isgouhi Kaloshian
University of California, Riverside

Cheryl A. Kerfeld
Michigan State University/Lawrence Berkeley National Laboratory

Jonathan Lynch
Pennsylvania State University

Maureen C. McCann
Purdue University



John McKay
Colorado State University

Kirankumar S. Mysore
Noble Research Institute

Thomas W. Okita
Washington State University

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.

Katy McIntyre

Title: PhD Candidate, Vice Chair of the Ambassador Alliance, and NSF Graduate Research Fellow

Place of Work or School: Colorado State University

Member Since: 2016

Research Area: Molecular Plant Pathology

What would you tell colleagues to encourage them to join ASPB?

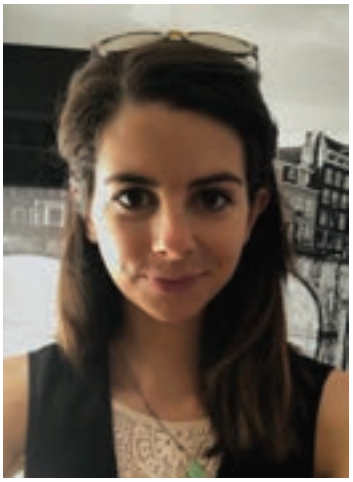
ASPB is one of the only scientific societies for plant biologists that provides a platform for high-level scientific research while being inclusive of the many areas of plant biology research. Also, ASPB has so many opportunities to get involved in a scientific society, whether through joining the Ambassador Program, applying to fellowship programs, or becoming involved in all its various committees. These opportunities can advance your professional career while increasing your exposure to networking opportunities.

Was someone instrumental in getting you to join ASPB?

I first heard about ASPB in my first year as a graduate student, when I was telling one of my committee members, Dan Bush, about my interest in science communication. At the time, I was unaware that Dr. Bush is a Legacy Society Founding Member and a former secretary and president of ASPB. He encouraged me to look into the Ambassador Program, and that was why I applied. Even after I became an ambassador, it wasn't until I met Rishi Masalia at my first Plant Biology conference that I became really involved in the Society. Not only did he introduce me to many members of the Membership Committee and other ambassadors, he also made me feel welcome and gave me confidence that my ideas could be of value to the future of ASPB.

Have you enhanced your career, lab, research, or education using ASPB, the Plant Biology meeting, section meetings, Plantae.org, *The Plant Cell*, *Plant Physiology*, or *Plant Direct*?

As a graduate student, I have no doubt that *The Plant Cell* and *Plant Physiology* have had a large role in broadening my knowledge of my own field of research, but also other areas of plant biology that I had little knowledge of. Being an ambassador, I do a



lot of outreach in my community here in Colorado, and I've used the education information provided on ASPB's website along with interesting plant facts I've found from reading blog posts on Plantae. Further, I cannot give the Plant Biology conference enough credit for providing me with so many networking opportunities through attending workshops, talking to industry representatives, and hearing about new research findings at the poster sessions. I believe ASPB has provided me with more resources for my own knowledge, research, and career than other societies.

How or why did you get into plant science?

I actually have a bachelor's degree in biochemistry, which was based around bacteria and mammalian classwork, so I never was on a path toward doing anything with plants. However, in my junior year, I looked for a lab to join in order to get some real research experience, and I happened to receive a position in Cris Argueso's lab at a time when she was starting her own lab in plant pathology. Because I had no experience in research and no knowledge of plants, I was trained by and worked with her directly for two years. It was through her mentoring that I found a love for research and a curiosity about the molecular mechanisms of plant immunity, so I decided to stay in her lab and pursue a graduate degree. Honestly, being mentored by such a strong, talented, and incredibly smart woman is the reason I am where I am today.

What is your favorite thing about being a plant biologist?

I really enjoy the friendliness of plant biologists. Although science is competitive, every plant biologist I have met, whether beginning their career or having studied plants for 40 years, was always friendly and welcoming. I have friends in various scientific disciplines, such as cancer or pharmaceutical research, who tell me how difficult it is to either get help or create connections with other scientists because of the fear that someone could scoop their research. I'm grateful that I work in a scientific discipline that is so welcoming and helpful because I am able to reach out for help with unfamiliar protocols and develop relationships with well-known scientists I admire. As a plant biologist, I want to always

make sure I maintain a high level of friendliness to help ensure this great culture isn't lost.

How do you gather scientific information? What are your sources?

For my research, if it's a new topic I'm not familiar with, I find the most recent review article on the topic in the Web of Science database. While reading that article, I dig deeper into interesting or relevant information in its sources. I also participate in journal clubs in my own lab and with other plant scientists at my university. These force me to read articles that are outside my own research and that I normally wouldn't read on my own.

What advice would you give to a plant scientist just starting out?

Have patience. I still struggle with this almost daily, but patience is the key to not losing your drive and confidence. In the world of scientific research, working with plants is more of a long game. Unlike bacteria or yeast, plants take time and space to grow. Experiments have to be planned out weeks in advance, and sometimes getting a homozygous line seems to take forever. Growth chambers die, bugs invade, and bad batches of soil ruin weeks' or months' worth of experiments. It happens. For me, learning to have patience with time and failures that were out of my control was extremely frustrating, and that mental anguish can be detrimental.

What do you still have to learn?

I'm in the middle of my fourth year of a PhD, so some would say I must be done with learning, but the more I continue my education, the more I feel I know nothing! Even within my own research niche, I feel I have so much more to learn before I will consider myself an expert in plant immunity. I believe the largest area of plant biology I am lacking in is that of basic global agricultural practices. Because I love and research molecular biology, it's sometimes hard for me to take time to learn about the broader areas of plant biology, which really are vital for me to know in order to be the most effective at using new molecular techniques or discoveries.

What do you see as the most important role for scientific societies such as ASPB?

I think there are two important roles for scientific societies: being a platform for the spread of new scientific discoveries and providing professional development opportunities for early career scientists. It is vital that scientific societies provide high-level, sound science through peer-reviewed publications, because without this, valid scientific discoveries are not shared throughout the community to propel research forward. Also, when societies hold conferences that allow communication of new science, scientists have the opportunity to learn and discuss the research being presented. Therefore, conferences create an environment that ensures the validity of the science and provides new ideas for other research projects.

When scientific societies provide opportunities for early career scientists, they're contributing to the advancement of the future of science. Workshops and networking events allow young scientists to communicate their science, creating new experiences that allow them to progress as professionals. Without these opportunities, early career scientists might only receive training in a lab environment, which will not properly prepare them for their future career and will ultimately be detrimental to future members and leaders of science.

What are your hobbies?

I live in Colorado, so I have some of the best mountains in my backyard. Whether hiking in the summer or snowboarding in the winter, I try my best to be in the mountains as much as I can. I've also been riding horses since I was little and am fortunate to still have my old show competition horse, so I also ride my horse as often as I can. ■

Answers to the November/December Quick Quiz

How many ASPB members were there in 1925?
There were 104 members in 1925.

What was the annual membership fee in 1925?
In 1925 the annual membership fee was $1 (There was a proposal for a 50-cent fee.)

Job Board

Looking for a job, or looking to hire? Check out the ASPB job board on Plantae at https://jobs.plantae.org/. You can post jobs or your resume and also get job alerts.

Policy Update: A Preview of What's Likely to Be Happening in DC in 2020

BY MICHAEL BUSE
Lewis-Burke Associates, LLC

At the end of 2019, Congress and the White House reached a final agreement to fund the federal government in fiscal year (FY) 2020. ASPB saw steady growth for the Society's priority agencies, including $8.3 billion for NSF, a $200 million increase over FY2019, and $425 million for the USDA's Agriculture and Food Research Initiative, a $10 million increase compared with FY2019. USDA's ARS would also be spared proposed funding reductions and terminations.

ASPB's priorities in DOE's Biological and Environmental Research (BER), Basic Energy Science (BES), and Advanced Research Projects Agency–Energy (ARPA-E) all saw increases. BER received $750 million, $45 million above FY2019; BES received nearly $1.9 billion, $96 million above FY2019; and ARPA-E received $390 million, a $56 million increase. Additionally, NIH received a $2.6 billion increase to bring the agency to $41.7 billion. With FY2020 resolved, ASPB turns toward new opportunities in Washington as the new decade begins.

In Congress, the House Science Committee has begun considering proposals for reauthorizing NSF—a chance to shape new priorities for the foundation. However, as members of Congress return to the campaign trail for the November 2020 elections, legislative priorities will likely be delayed.

On the federal agency side, the Trump administration has nominated Sethuraman "Panch" Panchanathan, executive vice president at Arizona State University, to be the next director of NSF after France Córdova's term concludes this spring. Among several possible changes, Panchanathan's nomination brings with it the question of whether NSF will continue to focus on the Ten Big Ideas approach championed by Córdova. ASPB will continue to closely monitor changes to NSF's leadership and ensure the Society's priorities are shared when appropriate.

USDA continues to bring on staff at the new National Institute of Food and Agriculture (NIFA) headquarters in Kansas City, Missouri. ASPB will continue to engage with NIFA throughout this transition to be a resource and relay concerns from our community. ASPB will also continue to push for the implementation of new Farm Bill programs (Public Law 115-334), including Genomes to Phenomes and the Agriculture Advanced Research and Development Authority, to spur additional research support within the department.

With Plant Biology 2020 taking place in Washington, DC, this summer, ASPB welcomes the opportunity for the plant biology community to become more engaged in the Society's advocacy efforts. 2020 will be a dynamic year, and it will lay the foundation for future federal actions that will impact our U.S. members in particular. Plant Biology 2020 will feature a focus on policy, and attendees will have opportunities to get directly involved in our advocacy work. Please consider indicating your interest in supporting these efforts when you register for Plant Biology 2020; we hope you will join us!

Sources and Additional Information

- Lewis-Burke's full analysis of the FY2020 appropriations agreement can be found at https://tinyurl.com/rzzf9yu.
- NSF's announcement of Sethuraman Panchanathan's nomination can be found at https://tinyurl.com/yx4nzjz3. ■

ASPB in the Windy City: National Association of Biology Teachers 2019

BY VALERIE HAYWOOD
Case Western Reserve University, ASPB Education Committee

Chicago was home to the recent National Association of Biology Teachers professional development conference, held November 14–17, 2019. More than 1,500 educators and administrators representing all levels of education attended this year's event, which bills itself as the largest national conference dedicated exclusively to life science education.

The ASPB Education Committee was one of 66 exhibitors at the conference, and ASPB Education Coordinator Winnie Nham and I organized the booth. ASPB members from the greater Chicago area and beyond volunteered their time in the booth to help communicate the importance of plant biology education and information about ASPB to conference attendees. We offer special thanks to ASPB member volunteers Jennifer Arp (Danforth Center), Jean Greenberg (University of Chicago), Karen Hudson (USDA–ARS, Purdue University), Kat Markam (University of Minnesota), Jess Morgan (University of Chicago), DJ Speed (University of Chicago), and Scott Woody (University of Wisconsin).

For more information on the ASPB Education Committee, please visit https://aspb.org/education-outreach. ■

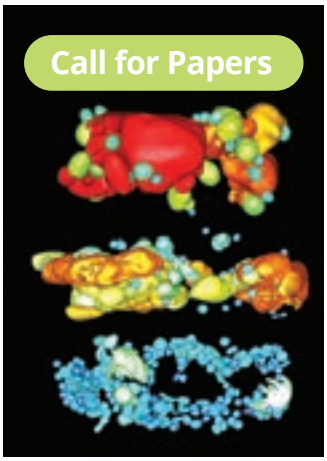
ASPB member volunteers at NABT 2019 (left to right): Scott Woody, DJ Speed, Jean Greenberg, Jennifer Arp, Kat Markam, Karen Hudson, and Jess Morgan.

Meet 2020 Transforming Education in Plant Biology Recipient Katelyn Butler

ASPB's Transforming Education in Plant Biology (TEPB) program provides financial support for plant biology educators to participate in focused, substantive, and practical professional development. Awardees use this professional development to create new instructional materials in plant biology that align with ASPB's core concepts in plant biology (http://bit.ly/ASPBCoreConcepts).TEPB awards are particularly well suited to faculty who are planning to build or revise courses or curricula to incorporate evidence-based methods of teaching and learning. Meet the 2020 recipient, Katelyn Butler.

I am a plant pathologist and assistant professor at Anderson University in Anderson, Indiana. Although my primary research interests focus on interactions between plants and with their pathogens, I have enjoyed spreading my roots to all areas of molecular plant biology as my students and I explore the role of understudied proteins in Arabidopsis. As a recent addition to the faculty at Anderson, I have been revamping my introductory plant science course, which teaches the fundamentals of biology through the lens of plants. This course provides an exciting opportunity to teach students foundational knowledge they can apply throughout their careers while also introducing them to the exciting world of plant biology (and converting a few to a career in plants along the way).

As a recipient of the Transforming Education in Plant Biology award, I will attend the National Center for Case Study Teaching in Science workshop to learn how to write effective case studies for use in my introductory plant science classroom. I then plan to write five case studies, each aligned with a AAAS core concept in biology and the APSB Plant Biology Learning Objectives (http://bit.ly/ASPBCoreConcepts). These case studies will provide students an inquiry-based way to explore the fundamentals of biology through the world of plants and will be shared with the broader biology education community. I plan to assess the efficacy of the case studies in improving students' understanding of the AAAS Core Concepts and to present my work to the ASPB community. My hope is that these case studies will be used broadly in introductory biology courses and bring exciting, relevant plant biology to all students. ■



Plant Physiology®
2021 Focus Issue on Dynamic Membranes

Edited by Teun Munnik, Sébastien Mongrand, Viktor Zársky, and Mike Blatt

Submission Deadline: May 4, 2020; Publication Date: January 2021

The Focus Issue on Dynamic Membranes will capture up-to-date views and perspectives on developments at the forefront of membrane research, and it will highlight the most important gaps in understanding that will be the focus for future studies. Invited Updates will provide reviews on areas that continue to add transformative insights pertinent to existing knowledge and on nascent but important areas of future development. We seek submissions of research articles on all aspects that make plant membranes dynamic, including signaling, endocytosis, exocytosis, vesicular transport, membrane barriers, protein and lipid binding, and the mechanics of these processes.

For more information, go to https://aspb.org/ppfocus/.

ASPB Summer Undergraduate Research Fellowship (SURF)

http://surf.aspb.org/

ASPB's Summer Undergraduate Research Fellowship (SURF) funds promising undergraduate students so they can conduct research in plant biology during the early part of their college careers. SURF recipients must present their research at ASPB's annual Plant Biology meeting in the year following the fellowship award.

Eligibility

Application is open to all full-time undergraduate students in a degree-granting program. Students completing their second year are preferred, but well-prepared first- and third-year students who provide evidence of a strong interest in plant biology may apply as well. Undergraduates needing more or less than the standard four years to earn a degree may still be eligible. International students or students following nontraditional academic calendars are welcome. In order to provide support to the maximum number of students, SURF awards are limited to students without other sources of stipend or salary for the proposed research. Supplemental funds for room and board are acceptable.

Faculty Mentors

Students must secure a mentor before submitting an application. The proposed research project must be pursued in the mentor's laboratory. Mentors must be a member of ASPB, have an ongoing research program of high scientific merit, and demonstrate a commitment to undergraduate education and research. Mentors are expected to attend Plant Biology 2021 in Pittsburgh, Pennsylvania, with their SURF student.

Need a Mentor? Students may work with a mentor at their own institution or at another institution. Additional guidance is available by contacting ASPB (see below).

Application

A complete application will include a research project statement and personal statement from the student, a research and mentoring statement from the mentor, a letter of recommendation from another faculty member (not the mentor or in the mentor's lab), and official undergraduate transcripts.

Selection Criteria

Competitive student applicants should have high academic achievement, strong motivation and skills for conducting research, and career objectives showing interest in or relevance to plant biology. Reviewers also will consider the contribution of the project to the mentor's research program, institutional commitment to the proposed research, and the mentor's commitment to undergraduate research.

Successful applicants receive a $4,000 summer stipend, a one-year membership in ASPB, and $700 (paid to the mentor or institution) for materials and supplies. Each fellowship also provides student travel support to Plant Biology 2021, the ASPB annual meeting, to be held July 17–21, 2021, in Pittsburgh. These travel funds are sent only to the 2020 SURF recipients who (1) register for the meeting, (2) submit proof of using social media or other outlets to communicate with the public or peers about the SURF project, and (3) author and submit an abstract about their SURF project to present as a poster at the meeting.

A Successful SURF Applicant's Sample Timeline

Contact potential mentors: NOW

Discuss research topics: NOW

Request a reference letter:
by January 2020 (from college/university faculty member who is not the mentor)

Submit SURF application:
by the deadline, March 15, 2020 (11:59 p.m. ET)

Look for emailed decisions:
by mid-April 2020

Conduct research:
over 10 consecutive weeks when classes are not in session

Present research: July 17–21, 2021, at Plant Biology 2021 in Pittsburgh.

Applications will be accepted through March 15, 2020 (11:59 p.m. ET).

Need additional help?

Contact Winnie Nham, ASPB Education Coordinator (education@aspb.org).

The ASPB Plant Biology Learning Objectives, Outreach Materials & Education Grant

In 1995, ASPB established this grant program (the name changed over time) with the goal to enhance plant biology education, public awareness, and understanding of the essential roles of plants in all areas of life.

Open to ASPB members with education and outreach projects that advance youth, student, and general public knowledge or appreciation of plant biology. These projects should strive to promote and explain varying facets of the following:

- Importance of plants for the sustainable production of medicine, food, fibers, and fuels;
- Critical role plants play in sustaining functional ecosystems in changing environments;
- Latest developments in plant biotechnologies, including genetic modifications that improve the quality and disease and stress resistance of crops;
- Discoveries made in plants that have led to improved human health and well-being; and
- Range of careers related to plant biology or available to plant biologists.

For 2020, special consideration will be given to laboratory exercises and experiences developed for **undergraduate and/or advanced high school** students that enhance student understanding and mastery of plant biology.

View the full RFP at
http://bloome.aspb.org

Applications accepted
January 15, 2020–April 5, 2020

Maximum funding: $50,000

Successful applicants will propose projects that develop, implement, widely disseminate, and evaluate resources that align with current effective scientific teaching practices such as those offered in the

- Vision and Change recommendations,
- ASPB's Core Concepts in Plant Biology,
- ASPB 12 Principles of Plant Biology, or
- Next Generation Science Standards.

Plant BLOOME supports plant science education or outreach projects only. It does not support lab or field research projects.

Mary E. Clutter

1930–2019

BY VIRGINIA WALBOT, JANE SILVERTHORNE, AND MACHI DILWORTH

Our beloved mentor, friend, and colleague Mary E. Clutter, retired NSF assistant director for Biological Sciences, died peacefully on December 9, 2019, in Alexandria, Virginia, at the age of 89.

Mary Clutter was born March 29, 1930, in Charleroi, Pennsylvania, to Frank and Helen Clutter. She had two brothers and a sister. She earned a BS in biology from Allegheny College, where she developed a passion for plants. In her first job, in the Harvard laboratory of Ralph Wetmore, Mary mastered plant tissue culture. After team member Ian Sussex became assistant professor at the University of Pittsburgh, she returned to her hometown to be his first graduate student, earning both her MS and PhD there. Her work pioneered new techniques in eliciting novel developmental programs in differentiated cells—what today we call *reprogramming*.

Mary's capstone experiments on vascular element differentiation in tobacco pith were published as a solo-authored paper in *Science* in 1960 (Clutter, 1960). That year, the Sussex group moved to Yale University, and Mary started a position as a research associate. Work continued on auxin impact on differentiation and on auxin transport through vascular and nonvascular tissues. Motivated by the discovery of polytene chromosomes in suspensor cells of bean plants, Mary and her unofficial first graduate student, Tom Brady, were the first to implement in situ chromosome gene detection in plants (Brady and Clutter, 1972).

Mary with her Distinguished Service Medal, presented to her upon her retirement in August 2005.

Mary working on her Plant Biology 2006 talk with Courtney Smoot and Machi Dilworth.

Despite her flourishing independent research program, the prospects for a permanent position at Yale were not bright, as was typical at the time. Mary was deeply disturbed by the lack of career opportunities for women and by the lack of awareness among the then all-male undergraduate class. Instead of just lamenting, she and Virginia Walbot developed and taught a course on the interface of science and society that involved sampling river water at industry sites. They got all 100 students involved in assessing the impact of industry on the daily life of residents of New Haven, the start of Yale's involvement in improving the town.

On a second front, along with Walbot, Mary Lake Polan, and others, Mary was instrumental in organizing the women in science movement. In fact, her next *Science* publication was a 1972 letter published with Walbot announcing that AAAS had authorized $50,000 to establish a Women in Science Office, something they had lobbied for at the 1971 annual meeting (Clutter and Walbot, 1972). The Women in Science Office morphed into the many AAAS efforts today for inclusion and diversity in science.

"Shocking" was the reaction of Yale's male faculty when Mary was appointed as a rotator for the Developmental Biology Program at NSF in 1974. This reaction would be repeated across the country as Mary began to invite accomplished yet underappreciated woman scientists to serve on NSF review panels and later as rotators. Her experience at Yale as a woman scientist deeply offended her sense of fairness, and as she embarked on her new career, a major objective for Mary was opening NSF opportunities to everyone based on merit.

Upon her arrival at NSF, Mary quickly became involved in NSF activities beyond developmental biology. After several years, she became a permanent NSF employee and ascended the lead-

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MARY E. CLUTTER
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ership ladder at NSF, moving up from program director, to division director for cellular biosciences, to science adviser to NSF Director Erich Bloch. In 1989, she was appointed assistant director for Biological, Behavioral, and Social Sciences (later changed to Biological Sciences [BIO] during reorganization), the position she held until her retirement in 2005.

Throughout her NSF career, Mary's highest priority was always to facilitate the advancement of science by supporting the very best research. Those of us who worked with her often heard her ask, "What about the science?" Mary demanded that all our decisions be justified on the basis of science. She was a leader with vision, and the creation of the Bioinformatics Program in 1991 is an example of her visionary thinking. She also recognized the importance of collaboration across institutional and national borders and of the integration of disciplines to advance 21st-century science. She played a key role in developing international science programs such as the Human Frontier Science Program and the Global Biodiversity Information Facility.

Mary viewed nurturing the next generation of scientists and promoting the participation of underrepresented groups as essential to advancing science. As a program director, she made sure that the review panel members were balanced in terms of expertise, gender, institution type, and geographic location. When she became BIO assistant director, she made it directorate policy not to support conferences that lacked women speakers. She also issued an internal memorandum that required the appointment of women on panels and committees equal to their numbers in biology. This practice has since been adopted widely across NSF.

Mary and companions attending the Moratorium to End the War in Vietnam. Arriving early morning on November 15, 1969, after an all-night drive from New Haven to the outskirts of Washington, DC, in Virginia Walbot's red Impala, they put on more clothes for a very chilly 18-mile walk. Mary featured black leather, and the grad students wore lab coats. President Nixon had school buses parked around the White House, and marchers were channeled through a predetermined route.

Mary and Tom Brady strolling along the docks in San Diego during the December 1971 American Society for Cell Biology meeting. The woman just behind Tom is Virginia Walbot's mother, who joined them for a week and was their chauffeur around the area.

In terms of her role in support of the plant sciences, they would not be where they are today if it were not for Mary's vision, leadership, encouragement, and support. She spearheaded numerous initiatives and activities, ushering in a golden age of research that changed the face of biology. Her efforts in the early 1980s were focused on applying and integrating molecular biology and biotechnology concepts and technologies in plant research, represented by the NSF Postdoctoral Research Fellowships in Plant Biology and the Plant Molecular Biology course at the Cold Spring Harbor Laboratory launched in 1983. This "plant postdoc program" supported 236 fellows over the course of 12 years, including current and past ASPB presidents.

It is a little-known fact that Mary was intimately involved in setting up USDA's Competitive Research Grants Office, which opened in 1977 and was the precursor of the Agriculture and Food Research Initiative. She dispatched her trusted deputy Holly Schauer to serve as associate chief scientist and arranged the transfer of veteran grants specialists from NSF. Similarly, she was instrumental in establishing the McKnight Foundation's Plant Biology Program, which started in 1983. When representatives from the McKnight Foundation sought her advice about the next research area to support, she not only convinced them to support plant biology but also provided advice on the most impactful mechanisms of support. This program provided training grants to institutions and individual no-strings-attached research grants, filling unmet needs of the plant community.

Mary's most ambitious initiatives were the Multinational Coordinated *Arabidopsis thaliana* Genome Research Project and the National Plant Genome Initiative. The Arabidopsis genome program was started when NIH decided against including Arabidopsis as one of the model organisms in the Human Genome Initiative. In her typical fashion, Mary quietly persuaded other funding agencies in the United States and abroad to coordinate and collaborate with NSF. The Multinational Coordinated *Arabidopsis thaliana* Genome Research Project was officially launched in 1990 with endorsement from Arabidopsis

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Horacio G. Pontis

1928–2019

BY ERICH GROTEWOLD

Horacio G. Pontis, professor of biological chemistry emeritus at the University of Mar del Plata, Argentina, and a world-renowned plant carbohydrate chemist researcher at CONICET (National Scientific and Technical Research Council–Argentina), died August 5, 2019, in Mar del Plata, Argentina. Horacio got his passion for carbohydrate biochemical research when he started working in the 1950s with Argentine Nobel Prize laureate Luis F. Leloir, a passion that accompanied him for the rest of his life.

Horacio was an old-school scientist who kept working at the bench until not long before his death. He maintained an active research enterprise, training undergraduate and PhD students and producing a steady flow of research publications totaling more than 100 articles, book chapters, and books. His major contributions included the discovery of compounds related to carbohydrate metabolism, the enzymes involved, the associated regulatory mechanisms, and the relationships to stress physiological responses. Horacio's many important contributions to plant biochemistry were recognized by ASPB in 2003 with a Corresponding Membership Award.

During his long career, Horacio trained more than 30 graduate students. His biological chemistry undergraduate students remember him especially for his challenging classes in which he intertwined metabolism with the principles of reactions between molecules based on chemistry and physical-chemistry principles. Because of Horacio's extensive teaching and training experience, the dean of the Faculty of Sciences at the University of Mar del Plata entrusted him with the organization of the university's science graduate school in the 1990s. The university showed its appreciation for Horacio's significant contributions by naming him emeritus professor in 2004.

First plant molecular biology course, 1986, the beginning of plant molecular biology in Argentina.

Throughout his career as a researcher, Horacio was highly valued for his creative PhD supervising approach in which he encouraged students to discuss and argue about biochemical hypotheses, and then challenged them to use their imagination to answer questions about the relevance to the physiology of the plant. Horacio's greatest gratification was when his students succeeded and opened up new fields of study. As a scientist, he felt no better reward than when his followers surpassed him in the advancement of scientific knowledge. Many of his students have held leadership positions at renowned universities and research centers around the world.

Horacio was born in Mendoza, a town in Western Argentina at the foot of the Andes. This origin explains his love for walking in the forest and climbing mountains despite having lived 40 years in a seaside city. He studied chemistry at the University of Buenos Aires, where he also earned his PhD in organic chemistry.

Early in his career, he worked as a postdoc alongside Leloir, who sparked and significantly influenced his interest in biochemical research on carbohydrates, sugar phosphates, and sugar nucleotides. As a postdoctoral fellow of the British Council, he had a productive experience in the Department of Chemistry at Durham University, King's College Newcastle upon Tyne (U.K.), in James Baddiley's laboratory working on the isolation of new nucleotides. At the end of the 1950s, Horacio moved to the Karolinska Institutet of the University of Stockholm (Sweden), where he delved into enzymology under the supervision of Peter Reichard.

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researchers from around the globe and the European Commission. Under the umbrella of this project, the complete genome sequence of Arabidopsis was accomplished in 2000 by six teams of scientists from France, Japan, the United Kingdom, and the United States.

The National Plant Genome Initiative sprang from community efforts initially led by the National Corn Growers Association and later joined by the diverse plant science community led by ASPB. It was a political process, although such an initiative also made scientific sense. When Congress was close to a vote on funding, Senator Christopher Bond (R-MO) asked Mary whether NSF would accept the funds and manage a new plant genomics program. Mary answered that NSF would accept the funds *if* he could guarantee that the funding was new money and *if* NSF was free to manage the program according to established NSF policies and procedures. Senator Bond agreed. The NSF Plant Genome Research Program (PGRP) started in 1998.

It was Mary's vision that transformed a potentially risky opportunity into a bold new direction for the plant sciences. She ensured that the PGRP enhanced rather than replaced the already vibrant research supported through the BIO core programs and at other agencies. As chair of the Interagency Working Group on Plant Genomes, Mary was an architect of the National Plant Genome Initiative five-year plans and the associated guiding principles. These principles—use of the highest standard of peer review to support merit-based funding decisions, rapid release of data and resources, and cooperation across national and international agencies and the private sector—were reflections of her deeply held belief that this funding should have the widest possible impact.

Mary received many honors in her long, distinguished career. Among them are the Leadership in Science Public Service Award from ASPB, Presidential Rank Awards from three presidents (Ronald Reagan, George H. W. Bush, and Bill Clinton), and honorary doctorates from Allegheny College and Mount Holyoke College.

After her retirement from NSF, Mary served as a consultant for the Cosmos Group, among other organizations, and as a member of the Boyce Thompson Institute board of directors. She also continued to enjoy attending the annual Plant and Animal Genome Conferences and AAAS meetings. To the end of her life, she remained enthusiastic about and interested in the many scientists whose careers she had helped to establish.

Although her contributions to science undoubtedly will continue to reverberate after her death, what we will miss most is Mary the person. She was always optimistic despite obstacles. She had boundless energy, and she was unsentimental but empathetic, critical but courteous, and respectful of others regardless of their social standing. In private, she loved to travel, enjoyed dinners with friends, and was very good with children. She especially loved watching the sun set over the ocean, hoping to see the green flash as it dropped below the horizon.

Mary's goal in life was nothing short of changing the world. We believe she succeeded. ■

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HORACIO G. PONTIS
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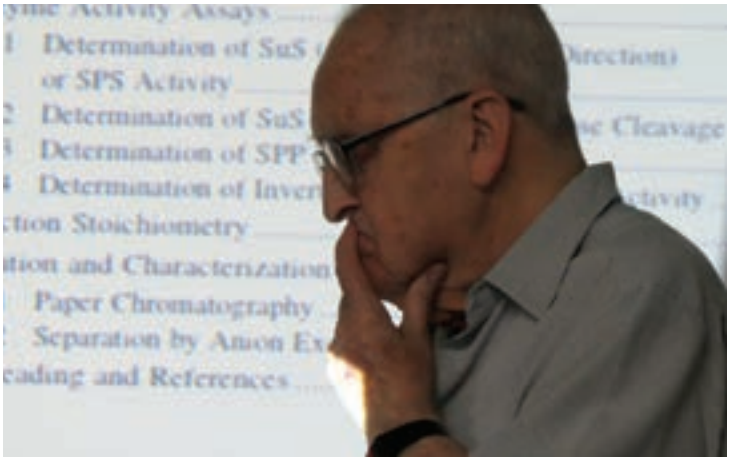
After his return to Argentina in 1960, Horacio began his work in the field of plant biochemistry. He became interested in fructose and fructan metabolism in his quest to find a fructose nucleotide that could be the donor for building polymer chains, according to what was believed at the time. It was then that he discovered the first fructose nucleotide, uridine-diphosphate fructose, together with a uridine-diphosphate acetylgalactosamine from dahlia tubers. This same train of thought inspired him to synthesize fructofuranose-2-phosphate and fructopyranose-2-phosphate, which became the first sugar phosphates with the phosphate group attached to the hemiacetal hydroxyl group.

In the mid-1960s, Horacio spent two years at the Biological Chemistry Institute of the University of Copenhagen (Denmark) in Agnete Munch-Petersen's laboratory. There, he shared his abilities in the use of chromatographic techniques for the separation of sugar phosphates and sugar nucleotides. This was the beginning of Horacio's pioneering studies on the metabolism of fructans in mono- and dicotyledonous plants and the enzymes that synthesize sucrose. Fructan and sucrose metabolism became Horacio's main subjects of research for the subsequent 40 years, his research team investigating enzyme regulatory properties and the tight link between sucrose synthase and sucrose phosphate synthase activities. For many years, Horacio was rather alone in advocating that fructans participated in tolerance to drought and cold stresses, which today is widely accepted. His discoveries in carrot tissue cultures laid the groundwork to show that sucrose had a role beyond a carbon source comparable to a regulatory molecule.

Horacio believed in science. After his return to the country in the 1970s, he was deeply interested in strengthening scientific research in Argentina. Although the intellectual, cultural, and scientific resources were located principally in Buenos Aires, he was not afraid to leave the capital to create and lead new research and teaching institutes in the interior of Argentina devoted to investigating functional plant biochemistry and plant molecular biology. These institutes included the Department of Biology in the Fundación Bariloche, San Carlos de Bariloche (1967); the Institute for Biological Research at the University of Mar del Plata (1979); with Leloir, the Foundation for Biochemical Applied Research, where he was the head of its Center for Biological Research; and more recently, the Instituto de Investigaciones en Biodiversidad y Biotecnología (2012).

To spread scientific research in Argentina, Horacio organized a series of symposia, conferences, and advanced courses with active participation by international experts. These gave Argentina international recognition and were among the first steps in building a robust national scientific presence. In 1972, together with Romano Piras, Horacio organized in San Carlos de Bariloche a symposium in Leloir's honor attended by Herman M. Kalckar, Phillips W. Robbins, Aida and Carl F. Cori, Feodor



Lynen, Jack Strominger, William Z. Hassid, Roger W. Jeanloz, David Sidney Feingold, Jack Preiss, and others. Horacio and Romano Piras edited a volume entitled *Biochemistry of the Glycosidic Linkage: An Integrated View* (Academic Press, 1972).

In 1986, Horacio and Graciela Salerno coorganized the first advanced course on plant molecular biology for Latin American students with the participation of Jack-Henry Weil, Michele Delseny, Simon Litvak, Pierre Yot, and Alejandro Araya. This event marked the beginning of plant molecular biology in the country. It was during this course that I first met Horacio and his team, and the experiences I acquired during this course had a significant impact on my career.

In 1995, Horacio's enthusiasm for carbohydrate metabolism inspired him to organize the First International Symposium on Sucrose Metabolism: Biochemistry, Physiology, and Molecular Biology, in Mar del Plata. Experts from many important scientific research groups participated to discuss the latest developments on sucrose, its synthesis and regulation of degradation, and its transport and interconversion into starch and fructans. Tom ap Rees delivered the concluding remarks, which called for continuing discussions on "What's Next?" The conference talks were published in Volume 14 of the Current Topics in Plant Physiology series (ASPP, 1995).

For the past decade, Horacio sought to pass on the experience he had gained over many years working on carbohydrate metabolism in photosynthetic organisms to the next generation. Still a teacher, he worked with two young researchers to compile all his protocols and experiences in *Methods for Analysis of Carbohydrate Metabolism in Photosynthetic Organisms: Plants, Green Algae and Cyanobacteria*, published in 2017 (Academic Press).

Horacio is survived by his wife of more than 46 years, Graciela Salerno; by their children, André Pontis and Sheila Pontis; and by the children of his first marriage, Erico Pontis and Cristina Pontis, and grandchildren Matias and Martin Piqueras. ■

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