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ASPBnews

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ASPB Membership: What's Your Story?

BY KENT CHAPMAN, ASPB PRESIDENT

I can still remember joining ASPB. It was in 1987 when I was a first year PhD student at Arizona State University. My PhD advisor, Richard Trelease, was on the editorial board of *Plant Physiology* (the society's only journal at the time), and the entire lab was planning to attend the annual meeting in St. Louis, Missouri. It was the first time that the annual meeting had not been held on a university campus, and I was excited and ultimately mesmerized by the experience of the annual meeting. I submitted an abstract and presented my research findings in poster format in the large hotel ballroom. Richard introduced me to colleagues in our field and many others across the country. I met students and postdocs from other labs, heard exciting talks from leading scientists, and although I didn't know it at the time, it was the start of building my professional network. I was hooked; I rarely missed an annual meeting over the next 38 years and always enjoy connecting with colleagues and meeting new friends. I look forward to Plant Biology 2026 this summer in Ottawa, Canada, where ASPB will host its annual meeting jointly with the Canadian Society of Plant Biologists (CSPB/SCBV).

Membership Value for All Career Stages

As I moved from PhD student to post-doctoral scientist to a tenure-track faculty position, I maintained my membership in ASPB. Membership has meant different things at different stages in my career, but ASPB has remained my professional home. ASPB was the place that I was introduced to the professor who would become my post-doc advisor, Thomas Moore, and his lab group. ASPB was the place where I connected with other plant scientists, especially since the university that I joined had only one other plant biology faculty member at the time. ASPB also is the place where I have found collaborators, learned new research ideas and approaches, met with program officers to discuss potential funding opportunities, and talked with vendors to equip my lab. ASPB also has been the place where a lot of my group's research has been shared, first in *Plant Physiology*, then in *The Plant Cell* and, recently, also in *Plant Direct*.

ASPB has given me much over the years—far more than the cost of annual dues—which can often be made up with meeting registration and publication discounts. In addition to tangible rewards, there are many often-overlooked benefits of ASPB membership. Like many plant biologists, I have been fortunate to be supported by federal research funding throughout my career, and many of the plant-focused programs that we've taken for granted at the NSF, the USDA and the Department of Energy, are a result of the exceptional efforts by those that have gone before us. Changing administration priorities regarding research funding remind us how important these federal dollars are to the education and training of plant scientists in our country. Advocacy efforts for plant biology funding are more important than ever, and I urge you to act where you can. Besides advocacy for U.S. research funding, ASPB remains a strong voice for plant science worldwide with partnerships in Asia, Europe, and the Americas. A notable first for the Society: with the appointment of

Kent Chapman, ASPB President

Anna Amtmann of the University of Glasgow as the next Editor-in-Chief of *Plant Physiology,* all three Editors-in-Chief of ASPB's journals will be based outside the U.S. This speaks to the Society's commitment to engaging with and supporting plant science researchers globally.

Those members in the business of teaching plant biology like me, likely have made extensive use of textbook and resource materials for their classrooms, most of which were developed by member efforts and/or supported by ASPB grant opportunities. Or maybe you've ordered the recent, "once-in-a-century" compendium of the latest research summaries published by ASPB, an excellent resource for comprehensive courses covering the breadth of plant science knowledge. In addition, plant biologists inside and outside our membership can stay informed about the latest news, views and employment

The ASPB News is distributed to all ASPB members and is also available online. It is published quarterly. 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. Contact: Sarah Black, Editor, ASPB News, 15501 Monona Drive, Rockville, MD 20855-2768 USA; sblack@aspb.org; 301-251-0560.

opportunities in plant science through Plantae, our digital ecosystem, and our strong social media channels. And many appreciate the webinars and workshops that are put on by ASPB members and staff.

ASPB Membership: Giving back

Many of my ASPB heroes have given much to promote the careers of plant scientists. Following their examples, ASPB also is a place where I've contributed my professional service over the years. This has included organizing regional meetings, representing sections at the national level, serving as an officer of the society, and working as an editor for *The Plant Cell*. Whether you've served many roles at ASPB or are looking to get involved, share your ASPB membership story in the feedback box below.

Finally, we recently conducted a community and member survey. It's been more than 15 years since our last poll of the membership. Whether you are a long-time member, a new member or considering becoming (or returning as) a member, we thank you for your time taking the survey to help us best serve your needs. Remember, we're stronger together.

Why ASPB's Science Policy Work Matters More Than Ever

Scientific discovery depends on more than innovative ideas and rigorous research. It depends on policies that allow science to thrive.

That reality has become especially clear following the US Office of Management and Budget's recent proposed revisions to the Uniform Guidance governing federal research funding. Among other changes, the proposal would shift key grant review responsibilities away from scientific program officers to political appointees, restrict the use of federal grant funds for publication fees, journal subscriptions, conference participation, and international collaboration, and weaken the peer-review system that underpins scientific excellence in the United States. If implemented, these changes would fundamentally reshape how federally funded research is reviewed, conducted, communicated, and shared.

"ASPB has long worked to ensure that policymakers understand the essential role of plant science in addressing global challenges, from food security and agricultural innovation to climate resilience and ecosystem health."

At moments like this, ASPB's science policy and advocacy efforts become more important than ever.

Advocacy Is a Core Part of ASPB's Mission

ASPB has long worked to ensure that policymakers understand the essential role of plant science in addressing global challenges, from food security and agricultural innovation to climate resilience and ecosystem health. Through its Science Policy Committee, partnerships with Lewis-Burke Associates, and collaborations across the broader scientific community, ASPB helps amplify the voice of plant scientists where it matters most: in the policymaking process.

In her recent update on the Plant Science Today blog, ASPB President-elect Tessa Burch-Smith reminded members that advocacy is not the responsibility of a few individuals, it is a shared responsibility across the scientific community. As she wrote: "There is strength in numbers."

She went on to emphasize that this is an extraordinary moment for scientists to engage, noting that ASPB is preparing organizational comments and working with partners across the STEM community to ensure that the voice of plant science is heard during the current public comment period.

SCIENCE POLICY

Recent Advocacy in Action

ASPB is continuously engaged in a broad range of science policy initiatives that protect the research enterprise and strengthen the future of plant science.

Among these efforts, ASPB has most recently:

- **Joined a coalition supporting federal agricultural research**, calling on Congress to strengthen oversight of changes affecting the US Department of Agriculture's Research, Education, and Economics mission area and reaffirming that federal agricultural research remains the backbone of American innovation and food security.
- **Signed a coalition letter supporting US Forest Service research infrastructure**, warning that proposed closures and reorganizations would diminish the scientific capacity needed to protect forests, ecosystems, and natural resources.
- **Joined more than 40 scientific organizations in supporting the National Science Foundation's full research mission**, urging Congress to maintain support for every component of NSF's research portfolio and recognizing that scientific breakthroughs depend upon a strong, interdisciplinary research ecosystem.
- **Issued a call to action supporting the advancement of Next Generation Science through Plant Systems as Non-Animal Models (NAMs)**, highlighting the growing importance of plant systems in developing innovative, ethical, and sustainable research approaches while encouraging federal support for these emerging technologies.

Together, these efforts demonstrate ASPB's ongoing commitment to advocating not only for plant scientists, but for the integrity of the broader scientific enterprise.

A Collective Voice

The current OMB proposal underscores why sustained engagement in science policy matters. Decisions made in Washington influence every stage of the research process, from how grants are awarded to how discoveries are published and how scientists collaborate across institutions and international borders.

ASPB will continue working alongside scientific societies, coalition partners, and policymakers to advocate for policies grounded in scientific excellence, evidence-based decision-making, and the open exchange of knowledge.

Advocacy is one of the ways ASPB fulfills its mission to promote the growth and development of plant biology. In today's policy environment, ensuring that plant scientists have a voice has never been more important, and that voice is strongest when the entire community speaks together.

STAY UPDATED ON POLICY NEWS BY FOLLOWING THE POLICY BLOG AT:
BLOG.ASPB.ORG/CATEGORY/POLICY

Robert (Bob) Goldberg

1944–2025

BY ROBERT L. FISCHER, UNIVERSITY OF CALIFORNIA, BERKELEY; JOHN J. HARADA, UNIVERSITY OF CALIFORNIA, DAVIS; BRANDON LE, UNIVERSITY OF CALIFORNIA, RIVERSIDE

On November 21, 2025, the plant community lost Robert (Bob) Bruce Goldberg, a Distinguished Professor at UCLA and a pioneering giant in plant molecular biology. Bob was an innovative, trailblazing plant scientist, leader and advocate for plant biotechnology, and an exceptional educator and mentor. Over a 50-year career, Bob made fundamental discoveries in plant genome organization and gene expression. Using state-of-the-art hybridization techniques before modern molecular tools existed, he provided the first global overview of gene expression across the plant life cycle. His ingenuity led to the development of the Barnase-Barstar male sterility system, a breakthrough recognized as one of the top 15 discoveries in UCLA history for its role in increasing crop yields via hybrid vigor. Bob's scientific recognition and honors include election to the National Academy of Sciences (2001) and selection as fellow of the American Association for the Advancement of Science (2009) and of the American Society of Plant Biologists (ASPB) (2009). He was the recipient of the Brazilian National Order of Scientific Merit (1998) and the ASPB Stephen Hales Prize (2015).

Bob was equally renowned as an extraordinary educator. As recipient of the UCLA Gold Shield Award and a Howard Hughes Medical Institute Professor, he was celebrated for a Socratic, engaging teaching style that brought science alive for both science and non-science majors. His accolades in the classroom also include the Biology Department Distinguished Teaching Award, UCLA Academic Senate's Luckman Distinguished Teaching Award, the California Legislative Assembly Recognition for Distinguished Teaching, and being recognized as one of "Top 20 Professors" in UCLA history.

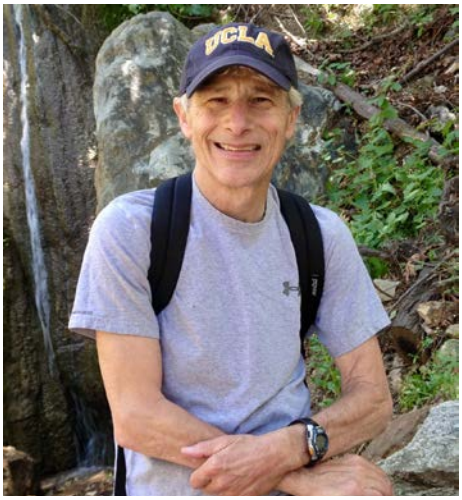
Beyond the lab, Bob was a community leader who co-founded Ceres, Inc., served as the founding Editor-in-Chief of *The Plant Cell*, and directed the Embryo 21st Century Project.

Life

Born in 1944 in Cleveland, Ohio, Bob's scientific journey was sparked by a biology class taught by Professor Norman Cohn at Ohio University. During his PhD studies at the University of Arizona with Professor Albert Seigel, he overcame a life-altering battle with transverse myelitis. Despite initial paralysis and a permanent disability in use of his dominant hand, his resilience allowed him to finish his doctorate in 1971. He subsequently pursued a consequential postdoc at the California Institute of Technology with Professor Eric Davidson, where he mastered the genomic techniques that would define his early career. After a brief faculty tenure at Wayne State University, Bob joined UCLA in 1976. For the next five decades, he applied his expertise to unraveling the complexities of how plant genes are regulated during development. He is survived by his wife, Michele Evans, and three children (Tynan, Aaron, and Makenna). His legacy lives on through his groundbreaking research and the generations of scientists, educators, and students that he inspired.

Science

Bob pioneered plant molecular and developmental biology with lasting impacts on the scientific community. He discovered that tobacco and soybean had complex genomes, with long stretches of highly



repeated DNA and shorter segments of "single copy" DNA, which contained genes that were interspersed with repeated DNA. These conclusions were obtained before the advent of recombinant DNA approaches and were later verified with genome sequencing studies. He was among the first to clone plant genes and characterize their structure and expression. His studies demonstrated that plant genes contain introns, and he characterized the relationship between gene family members and their organization. He created the twenty-year Embryo 21st Century Project, comprised of a group of labs from different universities whose goal was to define all the genes that make a seed and their functions, a profound contribution to seed biology.

An overarching theme of Bob's research career was understanding plant development by focusing on the spatial and temporal control of gene expression. Early in his career before DNA cloning, he compared mRNA populations in leaves, stems, roots, petals, anthers, and ovaries. He discovered

that most mRNAs were present either in all organs or were shared by a set of organs. Each organ possessed a small number of organ-specific mRNAs, indicating that an organ's unique morphology and physiology is determined by both organ-specific genes and genes differentially expressed in more than one organ. These concepts were later verified by plant RNA sequencing studies. His studies estimated that approximately 60,000 genes were expressed throughout the tobacco life cycle and showed that gene expression processes in plants and animals are similar even though they are separated by one billion years!

With the advent of recombinant DNA technologies, Bob identified specific genes to determine their developmental roles. He was the first to develop in situ hybridization procedures for plants and determined the spatial expression of specific genes in developing seeds and anthers, providing new insights into their developmental functions. A major accomplishment was profiling mRNA populations in all regions, tissues, and cell types of Arabidopsis and soybean seeds throughout development in genomic experiments using laser-capture microdissection. The resulting mRNA profiles provided new insights into the biological processes that occur in distinct seed compartments, and they identified genes expressed specifically in each seed compartment, especially those encoding transcription factors (TFs). He also profiled DNA methylation patterns in each seed compartment to understand epigenetic processes that regulate seed development. He obtained ultimate spatial resolution by characterizing mRNA transcriptomes of individual cells. These studies defined cell types and cell states present in developing seeds to determine their biological roles.

Another of Bob's special interests was the differentiation of the embryo proper and suspensor within the seed. The suspensor is a transient embryonic structure that provides nutrients and growth factors to the embryo proper early in seed development. He characterized their mRNA transcriptomes to define the biological processes and TFs that distinguish their development. He also conducted a comparative analysis of species with different suspensor morphologies and identified sets of suspensor- and embryo proper–specific TFs present in all species regardless of their morphology, suggesting that they are involved in differentiation processes shared by all plants.

> "If I had to say what were the most creative things I've ever done in my career, it's absolutely been in the classroom."

Bob's career-long passion was to understand the regulatory mechanisms that underlie the spatial and temporal expression of genes during plant development. Given his interest in suspensors, he functionally identified cis-acting regulatory elements and modules that control the transcription of suspensor-specific genes. These studies provided insights into a suspensor gene regulatory network. He also defined transcriptional regulatory networks that govern embryo development. Many studies focused on the TF LEC1, a master regulator of seed development which induces somatic embryo formation on leaves when expressed ectopically. By defining genes directly regulated by LEC1 and other key embryonic TFs, he showed that biological processes that occur at different stages of embryo development are regulated by specific combinations of TFs, indicating combinatorial transcriptional regulation.

Bob's spectacular contribution to translation science was developing an agronomic breeding system using DNA technology. Bob identified a gene expressed specifically in the tapetum of the anther, a nutrient-rich tissue critical for pollen development. Working with colleagues at Plant Genetic Systems, they used the gene's promoter to develop a system that ablated the tapetum and prevented pollen development, thus creating male-sterile plants that could be crossed with a different cultivar to produce hybrids. They also developed plants with a gene that restored fertility of the male-sterile plants. This Barnase-Barstar system enabled the production of crop hybrids which exhibit enhanced productivity and increased yields at a scale previously unattainable. Hybrid canola utilizing this system are grown in over 20 million acres around the world.

Classroom Teaching

"If I had to say what were the most creative things I've ever done in my career, it's absolutely been in the classroom." This quote from Bob Goldberg and an editorial written in 1993 for *The Plant Cell* titled "To Teach or Not" nicely summarizes his passion, priorities, and philosophy towards teaching. This passion was based on his belief that few students entered STEM fields, because classes did not convey the excitement of science. He also recognized the importance of teaching non-science students about the scientific method, because as future societal leaders, they needed to be able to critically evaluate scientific advances. Therefore, his teaching emphasized concepts and critical thinking,

rather than memorization. His strong belief was that undergraduate teaching by faculty was not properly emphasized or rewarded and that teaching should be considered more strongly in hiring and promotion actions.

Bob used the classroom as a laboratory to develop new teaching approaches, employing active learning methods before they were invented. First, he stressed student engagement in his classes, employing the Socratic method to foster critical thinking and student participation in lectures. His classes were multimedia, incorporating guest speakers from the community, films, classroom science demonstrations, and student skits. Second, he established collaborative learning environments, encouraging students to work as teams on homework and exams, including oral exams given in the classroom. Third, he developed online distance learning methods, initially with Kyoto University and later with University of California, Davis, and Tuskegee University, to broaden the reach of his classroom and to allow students to work with others from diverse backgrounds. Fourth, he developed a course titled "Teaching Students How to Teach", in which he taught undergraduate learning assistants how to teach discussion sections.

Mentoring

Although Bob is known for his impactful accomplishments in research and the classroom, an underappreciated aspect of his professional life was the quality of and his dedication to teaching as a mentor. His devotion to mentoring was guided by his personal experience. Professor Cohn sparked Bob's initial interest in plants and genetics and started Bob on his path to a scientific and academic career. Professor Eric Davidson, Bob's postdoctoral advisor at Caltech was an influential developmental biologist who served as a lifelong scientific mentor.

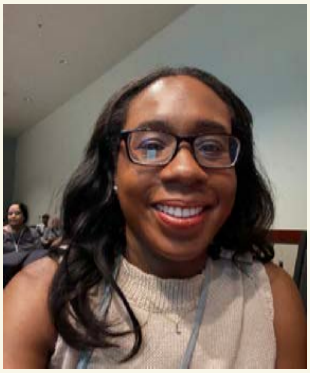
Although he tailored his mentoring to meet the individual needs of each student, some guiding principles remained constant. In science, he stressed conducting research to answer biological questions, developing complete stories, ensuring scientific rigor and ethics, and communicating findings clearly and succinctly. His students often learned classroom teaching methods indirectly by observing how he led laboratory meetings and by how he taught them to give presentations and seminars. His mentoring often continued even after his students moved on to university professorships and other professional positions, as he was always willing to discuss approaches to improve and innovate classroom teaching. Bob was a master communicator, and his professional development mentoring emphasized communicating ideas clearly, both in writing and orally. He provided straightforward and unvarnished advice, which was often not what his students wanted to hear, but ultimately advice that helped to advance their careers. He used his extensive network to help his mentees when warranted.

Service to the Community

Bob's contributions to the scientific community are considerable and consequential. He played a major role in helping to pioneer the research area of plant molecular biology, along with Brian Larkins, Sam Levings, Ralph Quatrano, and others. He led the first USDA grant panel devoted to plant molecular biology and organized some of the initial major international conferences on the topic. In addition, in 1988, Bob became the founding Editor-in-Chief of *The Plant Cell*. Charlie Arntzen, then President of the American Society of Plant Physiologists, asked Bob to start a new research journal for the society. Under Bob's leadership, the journal became the flagship journal for the Society and the field. Finally, Bob was an influential voice in public discussions about biotechnology, particularly in relation to genetically modified foods. He, along with producer Martin Durkin, made a film for ASPB titled "History's Harvest" that discussed the origins of agriculture and the role of classical breeding and genetic engineering in enhancing food production and quality. In 2012, Bob served on the No on California Proposition 37 Advisory Committee. The proposition, the Genetically Engineered Foods Initiative, would have required mandatory labeling of food from plants and animals that were genetically altered. Bob authored arguments against the Proposition, and appeared in debates about the Proposition, which ultimately failed.

Legacy

Bob leaves behind a towering legacy as a plant scientist, educator, and mentor whose work fundamentally reshaped our understanding of plant gene expression, genome organization and development. His Barnase-Barstar system alone has transformed agriculture across tens of millions of acres worldwide, while his five decades of research laid the conceptual groundwork that modern genomics continues to be built upon. Those fortunate enough to know him — his graduate students, postdocs, colleagues, and the countless undergraduates who sat in his lectures — encountered a rare combination of intellectual rigor, genuine warmth, and an infectious belief that science, taught well, could change how people think. He gave his mentees not just knowledge but standards: for honesty, for completeness, for clear communication, and for caring about the next generation as much as the next discovery. The scientific community is richer for everything he left behind. We are deeply grateful for Bob, and we will miss him every single day.



MEMBER SPOTLIGHT

Janeen C. Braynen

Post Doctoral Computational
Cold Spring Harbor Laboratory

Member Since: 2021

Research Area: Gene Regulatory Networks, Nutrient Stress, environmental stress, gene expression, and *Sorghum bicolor*

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

I would encourage colleagues to join ASPB by emphasizing both the professional and personal value of being part of a scientific society that is deeply committed to advancing plant biology. ASPB is more than just an organization; it is a community that fosters collaboration, innovation, and growth across all career stages.

For early-career scientists, I often highlight the importance of joining a society where they can build meaningful connections with peers, mentors, and leaders in the field. These relationships are invaluable; not only for career development, but also for gaining confidence and a sense of belonging within the scientific community. ASPB provides numerous opportunities through conferences, workshops, and leadership initiatives that allow young scientists to grow professionally while forming lasting networks.

From my own experience, ASPB has been instrumental in shaping my growth as both a scientist and a leader. Through my involvement, I've had the opportunity to develop leadership skills, engage in thoughtful discussions, and collaborate with individuals across different areas of plant science. It has also strengthened how I communicate and connect with others, especially in leadership spaces. These experiences have extended beyond my research and have really helped shape my overall professional identity. I truly believe that being part of ASPB equips scientists with the tools, connections, and experiences needed for long-term success.

Was someone instrumental in getting you to join ASPB?

My postdoctoral advisor, Doreen Ware, played a significant role in encouraging me to join ASPB. From the very beginning of my time in her lab, she emphasized the importance of engaging with the broader scientific community and becoming an active participant in professional societies. Her enthusiasm for ASPB was clear, and it created an environment where involvement in the society felt both encouraged and valued as part of professional growth.

This encouragement was not unique to me; many of her postdoctoral researchers were motivated to join ASPB early in their training. What stood out to me was seeing how that initial encouragement often turned into long-term engagement. Several former postdocs have remained active members, continued attending annual meetings, and even taken on leadership roles such as serving as ambassadors.

Seeing that level of continued involvement made a strong impression on me. It reinforced the idea that ASPB is not just a short-term resource, but a long-term professional community. Her mentorship helped me recognize the value of getting involved early, and that decision has had a lasting impact on my career and professional network.

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*? If so, please describe which services were most helpful and how so.

My involvement with ASPB has significantly enhanced multiple aspects of my career, including my research, professional development, and scientific perspective. One of the most impactful experiences has been attending the Plant Biology meetings. These meetings provide a dynamic environment where I am exposed to cutting-edge research, diverse methodologies, and emerging ideas across plant science.

Through attending symposia, concurrent sessions, and poster presentations, I have been able to incorporate new concepts into my own work, refine my research questions, and think more critically about experimental design and data interpretation. These interactions have not only strengthened my current projects but have also inspired new directions for future research.

Beyond the scientific content, the meetings have been invaluable for building connections and engaging in meaningful

discussions with other researchers. These conversations often extend beyond formal presentations and lead to collaborations, mentorship opportunities, and a deeper understanding of the field.

In addition to conferences, I have greatly benefited from ASPB's publications and online platforms. The journals provide high-quality, reliable sources of information that support my research, while Plantae offers an interactive space for continued learning. I particularly enjoy the webinars and community engagement on Plantae, as they allow me to stay connected to new developments and participate in discussions even outside of conference settings.

Overall, ASPB has provided me with a comprehensive ecosystem of resources that support both my scientific growth and my professional development, making it an essential part of my career journey.

How/why did you get into plant science?

I was initially drawn to plant science through a curiosity about how living systems respond and adapt to their environments. Plants, in particular, fascinated me because they are constantly exposed to changing conditions yet remain rooted in place. The idea that they can sense, respond, and adapt at multiple biological levels really captured my interest early on.

As I continued my training, that curiosity grew into a more focused interest in gene regulatory networks and how they control plant responses to nutrient and environmental stress. I became especially interested in how plants manage complex processes like nutrient uptake and stress signaling under conditions such as iron limitation or nitrogen stress.

What continues to motivate me is the balance between discovery and impact. I find it incredibly rewarding to study fundamental biological processes while also contributing to research that has real-world applications in agriculture, sustainability, and food security. That combination is what ultimately solidified my path in plant science.

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

My advice to a plant scientist just starting out would be to stay curious, be intentional, and remain open to growth. Science is a journey that comes with both challenges and opportunities, and embracing both is an important part of the process.

One of the most valuable things you can do early on is seek out mentorship and build your community. Connecting with peers, mentors, and collaborators can provide guidance, support, and new perspectives that shape your path in meaningful ways. Getting involved in scientific societies like ASPB is a great way to start building those connections.

I would also encourage stepping outside of your comfort zone. Whether it's learning a new skill, exploring computational approaches, or engaging in interdisciplinary work, growth often happens in those spaces where you feel challenged. Being open to new experiences can expand both your skill set and your confidence.

Lastly, remember that your voice matters. Take opportunities to share your work, ask questions, and engage in discussions. Confidence develops over time, but it starts with showing up and participating. Your perspective is valuable, and it deserves to be part of the conversation.

What is your favorite thing about being a plant biologist?

One of my favorite things about being a plant biologist is the opportunity to study systems that are both deeply fascinating and essential to life on Earth. Plants play such a central role in global processes; from food production to nutrient cycling; yet there is still so much to learn about how they function.

I am especially drawn to the complexity of how plants respond to environmental and nutrient stress. The way they integrate signals, regulate gene expression, and adjust their physiology is incredibly intricate. Being able to study these processes through gene regulatory networks allows me to explore how different layers of biology come together to produce meaningful outcomes.

I also really appreciate the interdisciplinary nature of the field. It allows me to work at the intersection of genomics, computational biology, and systems biology, while still keeping a strong connection to real-world applications. Knowing that this work can contribute to improving crop resilience and sustainability adds an extra sense of purpose.

What I value most, though, is that plant biology constantly challenges me to keep learning and asking new questions. It's a field where there is always more to discover, and that's what makes it so exciting to be a part of.

ASPB Member Dr. Leon Kochian Elected to the Royal Society of Canada

ASPB Member Dr. Leon Kochian, a Canada Excellence Research Chair in Global Food Security at the University of Saskatchewan, has been named a Fellow of the Royal Society of Canada.

Kochian's research has focused on the often-overlooked role of plant roots for over four decades. He has emerged as one of the world's most influential scientists addressing food security.

"We call roots a 'hidden half' because you can't see them in the real world," Kochian said. "The reason we focus on the roots is that they're much more poorly understood than plant shoots, and we know how important they are to successful crop production. They provide the nutrients, the water, and the anchorage for the plants."

Kochian's pioneering research launched international advances in acid-soil crop adaptation, as acid soils greatly limit developing country agriculture. He also demonstrated how larger root systems enhance crop yields by improving fertilizer and water acquisition, and discovered genes that enhance plant nutrient health and limit heavy metal entry into the food chain. The Canada Excellence Research Chair in Food Security, he is also one of the most highly cited plant scientists worldwide.

His lab investigates how root architecture can improve nutrient and water uptake, generating insights that are helping to advance modern agriculture. Kochian

(Photo: Erin Matthews/USask)

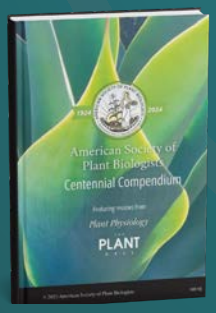
praises the research environment and his colleagues at USask, noting that he had the chance to work with a variety of research specialists to have an effect on the nutrition of the real world.

As a child, Kochian developed an interest in science through his father, who encouraged his curiosity by helping him set up microscopes in a small home lab to explore the world around him.

"It's really a new frontier that's just recently being explored," Kochian said. "Root biology is a hot research area now, as we better understand how root systems can be improved to enable the crop to do more with less – improving crop yields while using less water and fertilizer."

The Royal Society of Canada is considered the most prestigious collection of Canadian scholars, artists, and researchers across a vast interdisciplinary field. The RSC fosters intellectual leadership for Canada and for the world.

Teaching plant science?



Get the American Society of Plant Biologists Centennial Compendium: In Celebration of 100 Years of ASPB

the definitive historical and educational resource chronicling 100 years of plant biology research, discoveries, teaching tools, and community contributions.

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Taking Root and Branching Out

BY MARYAM RAHMATI ISHKA, PhD

Introduction

In early March 2025, I received an email informing me that I had been offered the position of Assistant Professor in the Department of Biological Sciences at EIU. It was not my first offer, but I had promised myself that if I received another one, I would accept it, and I did.

I now have a few months to finish my work at my current institution before stepping into a significant new role: leading my own research lab as a principal investigator. The joy I felt is hard to describe. It may sound funny, but I felt free, free to pursue the questions that truly matter to me, to invest in the ideas I genuinely care about.

But this is not the end of the story. I have come a long way, with many ups and downs, like most of you. There were moments when I nearly walked away from everything, but I regrouped and came back stronger, like a fighter in a boxing ring. I was ready to take on every challenge that came my way and to become what I aspired to be: the leader of a research group, mentoring my own students.

To those who have interacted with me, who talked to me, asked for advice, or shared a friendly coffee conversation in a hallway or at a conference, you know who I am. I speak directly and honestly, without regret or hesitation, but always with clarity and purpose. I have learned how to become the person I am today. That is why I decided to share my journey with my community, graduate students, plant scientists, early-career researchers, and postdocs (whom I have always considered particularly vulnerable at this stage). My goal is to help address the uncertainty many face when questioning whether continuing in this field is right for them. For that reason, I chose to write my story here. Hopefully, it will serve as an inspiration to other like-minded individuals pursuing a similar path. While your journey does not need to mirror mine, you can draw your own key lessons and takeaways to guide your progress forward.

Early Training: Taking Root

I was born and raised in northern Iran, just below the Caspian Sea. Growing up, I never imagined that I would one day become a plant scientist. Well, unless you count the random things I planted in my mom's garden. I grew potatoes from potato eyes, garlic, onions, things that often caught my mom off guard because she had no idea what was suddenly sprouting in her own backyard.

Back then, my plan was very different. I aspired to go to medical school and become a doctor. Based on my academic record, I was always considered a top student, and becoming a doctor felt like the natural expectation. However, in my country, getting into university requires competing in a national exam. I didn't score high enough for medical school. So, among the options available to me, I chose plant science. Very cool, right? Well … mainly because I didn't want to become a zoologist. I was too scared to touch animals. Yes, the same person who wanted to become a doctor was afraid of touching things. The irony is not lost on me.

I received my bachelor's degree in plant science, and afterward, I realized I wanted to learn even more about plants. I decided to pursue higher education. In my country, that meant earning a master's degree first. There is no direct path to a PhD after a bachelor's degree like there is in the United States. I completed my master's degree in plant

science as well, and it was during that time that I truly fell in love with research. Under the outstanding mentorship of Dr. Faezeh Ghanati, I discovered what it meant to be a scientist. She was an early-career professor who had just returned from Japan, committed to giving back to her country what she had learned abroad. Under her guidance, I learned how to write scientific papers, think critically, and present research with confidence. That period ignited a long-lasting passion in me for learning, researching, and sharing knowledge.

Afterward, I worked as a part-time lecturer for several years while pursuing my PhD in plant physiology. I spent countless hours reading hard-copy articles from plant physiology journals subscribed to by our university, one of the best institutions in Iran. I was fascinated by the writing, the scientific discoveries, and the way researchers framed and explored their questions. I practically lived in the library, immersed in those papers. As a result of that dedication and enthusiasm, I became the first author of several English-language publications while I was still a student in my home country, where English is not the native language.

By the time I began my PhD, I wanted to explore the world, to go to Europe, Canada, or the United States and meet the scientists I admired. Among them, I contacted Ron Mittler to visit his lab for six months as a visiting scientist, and he agreed. However, by the time I obtained my visa to come to the United States, he had already moved to another institution. As a result, I joined a different lab for my visit. That is when I met Jeff Harper, a man who never seems to tire of research. I became fascinated by the world of calcium signaling, pollen growth dynamics, and segregation analysis. That experience was enough to draw me into a PhD program in the United States. I made the bold decision to enter a PhD program in the United States for the second time in my life.

That was the first major turning point in my life. I made a critical decision because I was ready to take on new challenges. To this day, I have never regretted it.

I earned my PhD four years later. I did not graduate with a first-author publication, only as a co-author on a paper from the lab. During that time, two of my sons were born while I was still a student. But I graduated with something equally valuable: a powerful set of skills that have guided my career ever since. I became skilled in reproductive development, pollen assays, segregation analysis, and confocal microscopy, and the list goes on. More importantly, I learned how to think critically. At that point, I was ready to move forward with everything I had learned.

Professional Experience: Beyond the Bench

I completed my postdoctoral training at Cornell University and the Boyce Thompson Institute, where I was exposed to extensive professional development opportunities that I had not fully appreciated during graduate school. I became an active member of the Postdoctoral Society and regularly attended its meetings. I learned a great deal by listening to peers who were at more advanced stages of their careers, discussing job searches, application packages, professional challenges, and strategies for seeking support.

During that time, I felt a strong urgency to strengthen my soft skills: how to be an effective mentor, a supportive colleague, how to build a successful lab, and ultimately, how to become a principal investigator. It was also during this period that I joined the American Society of Plant Biologists (ASPB) and began exploring the many opportunities it offers to its members and the broader community.

For me, as an international scientist, becoming a member of ASPB once felt like a distant dream. Soon after joining, I began seeking opportunities to volunteer and contribute to the community. I did not pursue service simply to add lines to my CV. In fact, the more involved I became, the more I genuinely enjoyed working alongside like-minded colleagues on initiatives beyond our individual research projects. It was both fun and deeply rewarding. I served for two years on the Women in Plant Biology (WiPB) Committee as an early-career representative. During that time, I learned tremendously from outstanding mentors on the committee and received invaluable support while preparing my job application materials. Gradually, though not always in a linear way, I became more engaged and more confident. I stepped into roles I had never imagined myself taking on: chairing conferences, hosting webinars, organizing symposia. At the same time, I remained proactive in leading my research. Over time, I developed a more balanced skill set: scientifically strong and professionally capable.

That was the point when I felt certain that I was ready to lead my own independent lab as a PI, to transfer everything I had learned into mentorship for my own trainees and help them grow. I was ready to take on the world.

> “Scatter ideas like seeds and hope they take root.”

Transition into Faculty Role: Branching Out and Building a Vision

Although I am still new to this role, I feel blessed every single day and deeply grateful for where I am in my career, to teach, to mentor, and to conduct research alongside my talented students.

A dear friend of mine, Rose Marks, once shared a quote that continues to inspire me: *“Scatter ideas like seeds and hope they take root.”* I carry that thought with me each time I walk into the classroom, hoping that my teaching serves as the first spark, the initial germination point, for my students’ curiosity and discovery in plant science. Nothing brings me more joy than being with my students, listening to their ideas about their research projects. I make it a priority to truly listen and to think carefully about how I can help them move forward. It fascinates me how different individuals approach the same challenge in uniquely creative and innovative ways. I am learning every day from my students and lab members. For that, I am beyond grateful.

Growing Within a Scientific Ecosystem

For me, it has always been about community, professional societies, and strong mentorship, combined with my own perseverance and willingness to learn and step beyond my comfort zone. That combination made all the difference. I was inspired by colleagues and mentors who were deeply engaged in service to the scientific community, and I chose to follow their example.

In my current role, I will continue to stay actively involved in professional societies. I am committed not only to encouraging my mentees to join scientific communities, but also to supporting them by covering their memberships whenever possible. To me, this is what truly matters: we do not carry others to the finish line. We illuminate the path, walk beside them for a while and trust their strength to continue forward. When we open doors, share what we have learned, and invest in the growth of others, success becomes not just an individual achievement, but a shared legacy.

Welcome New Members of ASPB!

New members joining January 1 through March 31, 2026. Name and information as provided by member.

Uta Paszkowski
University of Cambridge

Xin-Guang Zhu

Shahidul Islam
University of Arkansas at Pine Bluff

Jing-Ke Weng
Northeastern University

Matteo Pivato
Max-Planck-Institut für Molekulare Pflanzenphysiologie (MPI-MP)

Heather Meyer
Syracuse University

Ramamurthy Baskar

Christopher Todd
University of Saskatchewan

Erin O'Brien
Utah Tech University

Mary Roth

Wei Cui
New Zealand Institute for Bioeconomy Science Limited

Shunping Yan
Huazhong Agricultural University

Babu Valliyodan
Lincoln University

Harsh Bais

Cheng-Ruei Lee
National Taiwan University

Eva Maria Gomez
Alvarez Universitat Politècnica de València

Neha Shukla
Central European Institute of Technology

Md Fahmid Hossain Bhuiyan
University of Tennessee Knoxville

Federico Ariel
IFIBYNE, CONICET-UBA

Alexandra Dickinson
UC San Diego

Samuel Chisholm
Virginia Tech

Rakesh Kumar Achary
National Institute of Plant Genome Research

Sarmistha Ghosh
South Mecklenburg High

Arijit Mukherjee
University of North Carolina at Chapel Hill

Vishadinie Jayasinghe Manachchige
Iowa State University

Yu Hung Hung
Spearhead Bio

Amrita Singh

Jeevan Kumar Shrestha
Academia Sinica

Oskar Siemianowski
University of Warsaw

Michelle Heeney
Cornell

Guillian Hernandez Casanova
Virginia Tech

Mehtab Singh
McGill University

Mehtab Singh
McGill University

Dana Charuvi
Agricultural Research Organization - Volcani Institute

Sarah Lam
UC Riverside

Ji-Hoon Rhee
Seoul National University

Brandi Castle
Arizona State University

Angela Sidsworth
University of Toronto

Kyle Lauersen
King Abdullah University of Science and Technology (KAUST)

Lucía Gonzalo

Jacquie Bede
McGill University

Muhammad Hammad
Thal University Bhakkar

Brandon Deeb

Yunchuan Wang
KAUST

Roisin Fattorini
University of Edinburgh

Emily Larson
Université de Montréal/ Institut de recherche en biologie végétales (IRBV)

Md Sifatul Islam
Ohio University

Carlos Bucio
University of North Texas

João Paulo Marques
University of São Paulo, Brazil

Danielle Levi
UC Davis

Sangeetha Ramesh
University of California Davis

Pushpendra Singh Gahlot

Charles Seller
University of Maryland, College Park

Raul Zavaliev
Brookhaven National Laboratory

Mouliraj Palanisamy
Bharathiar University

Ramlal Ayyagari
Universiti Sains Malaysia

Ashish Chauhan
Indian Institute of Technology (IIT) Mandi

Guannan Liu

Sravan Sanathanam
Alabama A&M University

Brigo Castillo
University of Manitoba

Anshul Phaugat
ARC Centre of Excellence Plants for Space

Cloey Parlapiano
West Virginia State University

Anastasia Kolesnikova
University of Southampton

Ariel Schlorff
Missouri Western State University

Santosh Rana Magar
Youngstown State University

Patrick Heinrich
Ruhr University Bochum

Aron Struss
Ruhr-University

Lily Schumacher
The Ohio State University

Sarbani Roy
Central University of Punjab

Hannah Berry
Pairwise

Colette Picard
University of Toronto

Drew Henkel

Mohamed Farah Abdulla
Protium Technologies

Emily Gallipeau-Burns
University of Ottawa

Sally Lee
University of North Carolina at Chapel Hill

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Jaykumar Mukeshbhai Patel
IBERS, Aberystwyth University

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Hardeep Singh
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Irish Lorraine Pabuayon
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Lydia Tressel
Cold Spring Harbor Laboratory visting scientist and ORISE USDA-ARS

Amna Sarmad
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FEATURE

EDUCATOR PERSPECTIVES ON

AI in Plant Biology

BY **MINDY FINDLATER,**
ASSISTANT TEACHING
PROFESSOR, UC MERCED

AND **ERIN FRIEDMAN,**
PROFESSOR OF BIOLOGY,
UNIVERSITY OF LYNCHBURG

Rooted in Reality: The New Educational Landscape

As educators, we are constantly evolving our teaching methods; we are innovating, revising, and updating our course content to engage students and push them toward higher levels of growth and achievement. Recently, however, our pedagogical landscape has experienced a seismic shift with the widespread availability of generative Artificial Intelligence (AI).

The peer-reviewed literature reflects both the tremendous potential and the profound challenges of this moment. A comprehensive review by Crompton and Burke (2023) highlights that while AI tools offer unprecedented opportunities for personalized learning and assessment support, they also require a fundamental rethinking of how we evaluate student comprehension. Similarly, Cotton et al. (2023) underscore the tension between AI's capacity to enhance collaborative learning and the significant faculty concerns regarding academic integrity and the deterioration of critical thinking.

While AI is incredibly effective at reducing cognitive load by automating everything from mundane, daily chores to huge administrative time sinks, outsourcing our thinking represents a complete 180-degree shift from the hands-on curiosity that draws most biologists into STEM. For many plant scientists in particular, exploring the natural world played a sizable role in their scientist origin story. Hands-on discovery cannot be replicated with words synthesized by large language models (LLMs) . Additionally, as discussed in an article by University of California, Merced Graduate Student Chris Bivins (2026), taxonomic understanding and species discovery are well beyond the abilities of even the most sophisticated AI models.

As biologists, we face an additional, striking paradox: the pedagogical value of AI must be rigorously weighed against its massive environmental footprint. The computing infrastructure required to train and run LLMs consumes staggering amounts of electricity and freshwater. The rapid deployment of AI servers is dramatically accelerating global data center energy demand, acting as a major hidden source of carbon emissions (de Vries, 2023) . Furthermore, recent modeling projects that the unchecked growth of AI infrastructure could soon drain upwards of a billion cubic meters of freshwater annually for data center cooling, exacerbating resource scarcity in ecologically vulnerable regions (Xiao et al., 2025) . For those of us teaching the mechanics of the natural world to the generation that will inherit these climate challenges, utilizing AI is not merely an educational choice, but a profound ecological one.

To move beyond the broad literature and understand how this shift is affecting education, we surveyed plant biology education colleagues; their responses offer an honest view of the complex reality of AI in our classrooms. While comfort levels with integrating AI varied wildly, one theme emerged clearly: AI is here. As Jonathan Gilkerson, Associate Professor at California State University, Sacramento, noted, "It's unavoidable, so we should try to use it just like any other tool." Conversely, another respondent described generative AI as a severe environmental and societal hazard, illustrating that our discipline remains deeply divided on the ethics and utility of this technology.

Cultivating Curriculum: How AI is Being Used Right Now

Despite this polarization, many educators are actively experimenting with AI to cultivate high-impact, student-centered curricula. Among the surveyed instructors, the most frequently cited application was using AI to assist with data analysis for lab experiments.

Beyond the lab bench, instructors are leveraging AI for administrative and formative assessment preparation. They use tools to draft exam questions, generate lab scenarios, and summarize learning outcomes. One educator noted that feeding lecture notes to an AI to draft an opening slide that summarizes the day's learning goals has been highly effective in helping students feel grounded before the material is even presented. Indeed, as seen in a recent immunology-focused teaching article, AI-supported course redesign can benefit both students and instructors alike (Manilay, 2026) .

In-class integration is also taking highly innovative forms. One instructor allows students to use AI during the last ten minutes of their exams, noting that students respond incredibly enthusiastically to the exercise. Reviewing the AI-corrected sections then provides prompt feedback to the instructor about their students' AI proficiency and problem-solving processes.

Bountiful Harvests: Benefits and Best Practices

When applied thoughtfully, AI has yielded bountiful harvests for plant biology students, particularly in breaking down barriers to complex information. A major benefit noted by several respondents is AI's ability to act as a concrete entry point for hard-to-digest primary literature, distilling complex experiments into accessible concepts. Sebastian S. Cocioba of Binomica Labs highlighted how AI allows students to explore biological mechanisms without fear of judgment. "They feel more prepared when asking me questions since they now have a deeper context," Cocioba explained. "They feel less worried [about] being judged by peers for asking 'stupid questions'... the private exploration of personal unknowns then follow up with real human one-on-one interactions with instructors has been helpful."

Our survey surfaced several highly actionable best practices for the classroom:

- **Conduct a Meta-Analysis of Prompts:** Cocioba recommends having students save and share their entire chat history. This allows the instructor to assess if the student is asking questions efficiently and realign them if they go on a distracting tangent.
- **Generate Tools, Not Answers:** When dealing with data analysis, one educator advises using AI to generate the necessary code (like Python or R scripts) to perform the analyses, rather than asking the AI to analyze the data directly, which frequently leads to confirmation bias.
- **Demonstrate Failure:** Gilkerson advocates for explicitly showing students "how AI can give wrong answers to homework," building healthy skepticism and scientific literacy.

Tangled Vines: Challenges, Ethics, and Things to Avoid

For all its benefits, AI introduces significant hurdles. The most dominant concern across the board was the loss of active, critical thinking. One educator starkly warned that students often operate under the false

assumption that they are performing better due to marginally higher essay scores, while in reality, this can be driven by AI support in essay creation, and without this support, the student may fail to grasp fundamental biological concepts and struggle to answer basic questions. Frequently observed conformation bias in LLM responses can also undermine student efforts when building practice tests and using AI-created study tools. Additionally, from his view as a course instructor, Bivins also shared that "the emotional cost surprised me. Asking students to build something with AI, and then to critique AI as part of the same assignment, placed real psychological weight on students who already perceived the technology as a threat to their futures. The pedagogical design was sound, but the affective dimension was harder to anticipate and harder to address."

When asked what educators should absolutely avoid, the respondents offered clear boundaries:

- **Do Not Ban It Completely:** Attempting to ban AI is largely seen as a futile exercise that ignores the reality of modern student resources; instead, educators stressed the necessity of understanding how to purposefully integrate these tools into coursework.
- **Do Not Use AI as the Sole Grading Tool:** While grading is faster with AI, Cocioba warns that instructors must manually conduct the contextual breakdown of a student's work. "Not knowing exactly how your students are struggling will only lead to low quality tutelage."
- **Do Not Trust AI Citations:** Multiple educators warned against trusting AI for references, noting the high prevalence of fabricated references and phantom links.

Because plant biology relies on precise taxonomy and complex physiological processes, hallucinations (instances where AI fabricates facts) are particularly dangerous and run the risk of reinforcing anti-science rhetoric if left unchecked. Respondents shared instances of AI generating bizarre images, operating under incorrect temporal assumptions, and falsifying experimental results.

The Next Season: Future Outlook and Final Thoughts

Ultimately, consensus among AI adopters is that the technology offers an unprecedented opportunity to teach modern scientific literacy, though the environmental and ethical costs of this technology are extreme. Disentangling the benefits and drawbacks is not a straightforward task, and teaching students about the tradeoffs is as important as modeling effective AI use. Moving forward, the goal of plant biology education cannot merely be the LLM-driven memorization of key concepts; we must teach students to explore nature, synthesize their knowledge, differentiate reality from hallucination, ask efficient questions, and rigorously evaluate the shortcomings of all of the tools in their own hands.

References

Bivins, C. (2026). AI needs solid botanical data more than ever. (2026). *Nature*, 652(8110), 543. https://doi.org/10.1038/d41586-026-01196-2

Cotton, D. R. E., Cotton, P. A., & Shipway, J. R. (2023). Chatting and cheating: Ensuring academic integrity in the era of ChatGPT. *Innovations in Education and Teaching International*, 61(2), 228–239. https://doi.org/10.1080/14703297.2023.2190148

Crompton, H., & Burke, D. (2023). Artificial intelligence in higher education: the state of the field. *International Journal of Educational Technology in Higher Education*, 20(1), 22. https://doi.org/10.1186/s41239-023-00392-8

de Vries, A. (2023). The growing energy footprint of artificial intelligence. *Joule*, 7(10), 2191–2194. https://doi.org/10.1016/j.joule.2023.09.004

Manilay, J. O. (2026). Teaching tool: Innovative approaches in teaching developmental immunology. *AAI News*. https://news.aai.org/2026/04/07/teaching-tool-innovative-approaches-developmental-immunology/

Xiao, T., Fuso Nerini, F., Matthews, H. D., Tavoni, M., & You, F. (2025). Environmental impact and net-zero pathways for sustainable artificial intelligence servers in the USA. *Nature Sustainability*, 8(12), 1541–1553. https://doi.org/10.1038/s41893-025-01681-y

FEATURE

Planting Curiosity: Bringing ASPB Outreach to Coram Elementary School

BY SAROJ SAH, ASPB AMBASSADOR
BROOKHAVEN NATIONAL LABORATORY, USA

The hallway outside the Coram Elementary School gym was buzzing with excitement. Students stood proudly beside their science fair projects, while parents and visitors moved from table to table, asking questions and celebrating their work. In the midst of this energy, I set up my table-not just to present plant science, but to spark curiosity.

As an ASPB Ambassador and a researcher at Brookhaven National Laboratory, I am often immersed in scientific questions at the frontier of research. But moments like this remind me why science begins long before the lab—with simple questions, hands-on exploration, and a sense of wonder.

The Coram Elementary School Science Fair, which featured 35 student participants and over 50 visitors, provided a perfect opportunity to bring plant science to life for young learners. My goal was simple: make plant biology approachable, interactive, and fun.

I started by sharing ASPB outreach materials. Students eagerly picked up copies of the *"My Life as a Plant"* coloring books, flipped through bookmarks illustrating the 12 Principles of Plant Biology, and explored elementary-level worksheets. These weren't just handouts—they became conversation starters.

"Do plants really eat sunlight?" one student asked.

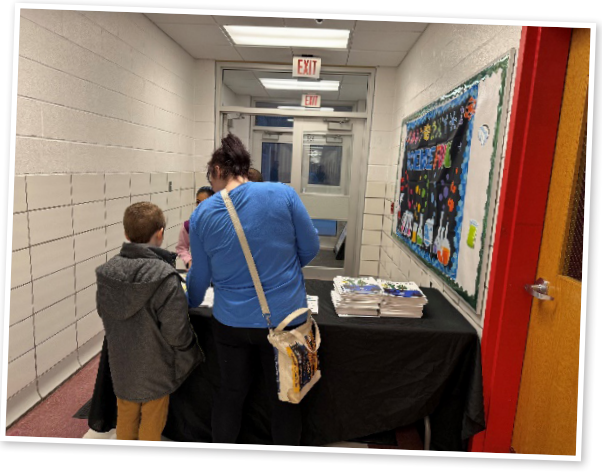
That question led to a discussion about photosynthesis, energy, and how plants quietly sustain life on Earth.

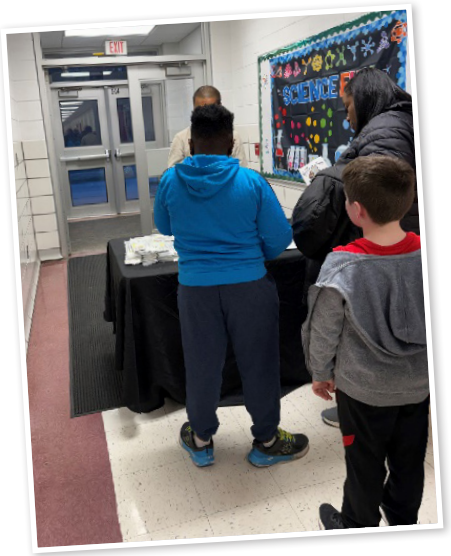
But the real magic happened when the kids got involved.

At one corner of the table, students created seed cups, carefully filling them with soil and planting seeds. Each child received a tracker to follow their plant's growth at home. As they worked, they asked questions- *How long will it take to grow? Do plants need sunlight every day?*, turning a simple activity into a personal experiment.

At another station, students gathered around for the lima bean dissection. With curiosity and a bit of hesitation, they opened the seeds to discover what was inside. Seeing the embryo for the first time sparked excitement-suddenly, a seed was no longer just something you plant; it was a living system waiting to grow.

Throughout the event, I watched something powerful unfold. Students who initially approached the table out of curiosity stayed longer, asked deeper questions, and began connecting ideas. Parents joined in,





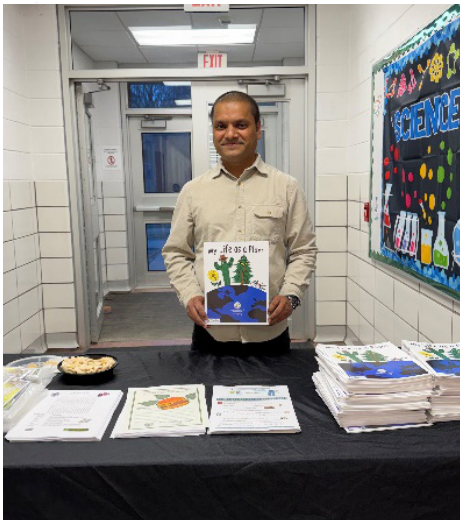
Students and families Interacting with ASPB outreach resources and learning about plant science concepts.

often just as intrigued, turning the experience into a shared moment of learning.

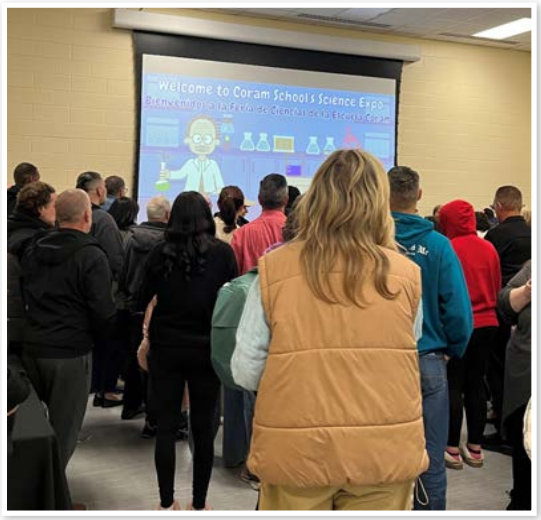
For me, this experience reinforced the importance of outreach. Science is not only about discovery-it is about communication, accessibility, and inspiration. Through ASPB's outreach efforts, we are not just teaching plant biology; we are helping young minds see themselves as future scientists.

As the event came to an end, many students left with materials in hand—coloring books, bookmarks, and worksheets—but more importantly, with new questions in mind. And perhaps, with the beginning of a lifelong interest in science.

Because sometimes, all it takes is a seed—planted at the right moment—to grow something much bigger.



Saroj Sah (ASPB Ambassador, Brookhaven National Laboratory) showcasing "My life as Plant" education materials at the Coram Elementary School Science Fair.



FEATURE

Inclusive Teaching

BY MARY WILLIAMS

One of the most exciting and important paradigm shifts in higher education is the idea that traditional teaching methods are not very effective for most learners, and a shift towards inclusive teaching; teaching strategies that recognize the impact of lived experiences and social identities on teaching and learning and that employ a wide range of teaching methods to more effectively reach people with different learning styles.

> "
>
> Inclusive teaching is a philosophy of teaching that provides equal opportunities for all students to have a successful learning experience.
>
> — BRIAN DEWSBURY (2017)
>
> "

Historically, inclusive teaching had as its focus students with physical or learning disabilities, but it has evolved to encompass considerations of social identities such as race, ethnicity, gender, and gender identity. At its simplest level, this can include ensuring that the curriculum does not solely highlight the contributions of white men but intentionally recognizes others' contributions. However, there are many additional ways that an instructor can shift toward a more inclusive teaching practice, as described below.

Although science requires an objective approach to research; from experimental design to data collection to analysis, strictly objective approaches to teaching are not effective. Numerous studies have shown that instructors who care about their students and who are trusted by their students are more effective as teachers and as ambassadors for the discipline. Furthermore, students who feel safe and valued as their authentic selves are more likely to persist in higher education.

Classroom Culture

An inclusive instructor demonstrates respect, openness, a willingness to listen, and an awareness of cultural differences, helping to instill a sense of belonging in their students. An inclusive instructor validates students' presence and abilities and adopts a strength-based approach and growth mindset in their teaching. An inclusive instructor understands that students have lives outside of the course such as juggling full-time jobs and family responsibilities, and is willing to accommodate planned or unexpected conflicts that arise.

Teaching Materials and Methods

Science is rigorous, demanding discipline, but it is not simply a set of facts and rules that must be learned. Science intersects with human lives in countless ways. An inclusive instructor connects the course material to students' lived experiences and values, by telling stories of how scientific knowledge improves the human experience, incorporating traditional knowledge into their teaching, and by showcasing diverse practitioners of science.

An inclusive teacher uses several teaching methods. Lectures have an important role, but a 50-minute lecture is not as effective as a classroom period that is broken up and provides opportunities for students to reflect on and engage with the material. Providing early access to the course materials, including lecture notes and slides, supports all learners but can particularly benefit people who are neurodivergent or who have learning differences. An inclusive teacher asks for and acts on feedback from students to improve the learning environment.

Assessment

Because students receive grades, assessment is a particularly fraught component of any classroom. An inclusive instructor carefully plans and communicates how and on what materials students will be assessed. Carefully developed learning objectives should be integrated into the assessment plan. A simple shift towards formative assessment (that takes place during the learning journey) versus summative assessment (that is a final evaluation at the end of the course) can make a big difference, in that students can learn from the assessment feedback. Assessment activities that reinforce connections between the course material and student experiences and values also lead to improved outcomes. Offering students various opportunities to demonstrate their learning is very important. Some students are brilliant essay writers, but others can showcase their new knowledge through creating a podcast or poster, giving an oral presentation, writing an opinion article for a newspaper, or creating a business plan for a startup company. Finally, the most common form of assessment in higher education, time-limited tests, are particularly problematic; see Gernsbacher et al (2020) for alternatives.

Further reading

Artze-Vega I, Darby F, Dewsbury B, and Imad M. (2023) The Norton Guide to Equity-Minded Teaching. W.W. Norton and Company. Also available as a free e-book https://seagull.wwnorton.com/equityguide.

Dewsbury B. (2017) On faculty development of STEM inclusive teaching practices. FEMS Microbiol. Lett. 364: fnx179, https://doi.org/10.1093/femsle/fnx179

Dewsbury B, and Brame CJ (2019) Inclusive teaching. CBE—Life Sciences Education, 18(2), fe2. Link

Gernsbacher MA, Soicher RN, and Becker-Blease KA (2020) Four empirically based reasons not to administer time-limited tests. *Translational Issues in Psychological Science, 6*(2), 175–190. https://doi.org/10.1037/tps0000232

Killpack TL, and Melón LC (2016) Toward inclusive STEM classrooms: What personal role do faculty play? CBE - Life Sciences Education, 15, es3. https://doi.org/10.1187/cbe.16-01-0020

Resources on Including from the National Science Teachers Association (NSTA) https://www.nsta.org/topics/inclusion/all

Announcing the 2026 ASPB Summer Undergraduate Research Fellows (SURF)

The ASPB SURF Award supports promising undergraduate students as they begin research in plant biology early in their college careers. Recipients receive a summer stipend and ASPB membership, along with additional funding for supplies and travel to attend ASPB's annual Plant Biology meeting in the year following their award.

Other recipients:

Scottie L. Mello

Michele Romina Alatriste León

Congratulations to the 2026 SURF recipients and their mentors!

Aritra Basu *(he/him)*

Mentor: Professor Aruna Kilaru

"As someone aiming to pursue plant science research, the ASPB SURF award will help me build a strong foundation and serve as a key stepping stone in my development. It will allow me to develop critical research skills—especially the ability to ask meaningful scientific questions—and gain clarity in shaping my academic and career path. This experience will put me on the right trajectory toward becoming a plant science researcher."

Phoenix Schlorff *(they/them)*

Mentor: Dr. Csengele Barta

"Receiving the SURF Award is an exciting step in my development as a scientist. My research on plant responses to environmental stress is driven by a desire to contribute to sustainable solutions for a changing environment. This opportunity supports my goal of using science to address global challenges and make a meaningful, lasting impact on the planet."

Danielle Levi *(she/her)*

Mentor: Dr. Philipp Zerbe

"Receiving the SURF award is an incredible boost as I continue to explore the complex biochemical mechanisms that enable plants to adapt and thrive. The support from ASPB provides me with the foundation to transition toward my goal of pursuing a PhD in Plant Biology, focusing on the molecular puzzles of plant life and contributing to a more sustainable agricultural system."

Lorenzo M. Prado *(he/him)*

Mentor: Thales D. Leandro, Assistant Professor

"Being the recipient of a SURF award supports my short and long term career goals by providing an immersive opportunity to develop a research project and serve as its primary researcher for a focused period. This experience will allow me to strengthen my critical thinking, leadership, and develop multiple skills, paving the way towards a future as a plant science researcher."

Sonali Gopal *(she/her)*

Mentor: Dr. Klaas van Wijk

"Receiving the SURF provides me with the unique opportunity to experience in-depth research and broaden my science communication skills as I prepare for Plant Biology 2027, with strong mentorship to guide me towards success. I look forward to using this opportunity to narrow down my interests within plant biology and prepare me for my future in graduate programs."

Andrew Oldag *(he/him)*

Mentor: Dr. Trevor M. Nolan, Assistant Professor of Bioengineering

"Receiving the SURF Award allows me to connect to the broader plant biology community at a formative stage in my career. My work linking root growth kinematics under drought to single cell transcriptomic data sits at the interface of several active fields, and I'm eager to contribute to the shared knowledge base and contribute to the collaborative culture that drives plant science forward."

Congratulations to ASPB's 2026 Award Recipients

Each year, ASPB recognizes individuals whose discoveries, leadership, mentorship, education, and service have made lasting contributions to plant science and the scientific community. Originally announced in April 2026, several of the below award recipients were recognized and celebrated at Plant Biology 2026 in Ottawa. We are proud to once again honor these outstanding scientists and educators for their exceptional achievements and dedication to advancing plant biology.

ASPB-Carnegie Winslow Briggs Mentorship Award

Antje Heese
University of Missouri-Columbia, MO

Steve Jacobsen
University of California, Los Angeles

Charles Albert Shull Award

Jing-Ke Weng
Northeastern University, Boston, MA

Charles F. Kettering Award

Krishna Niyogi
University of California, Berkeley

Charles Reid Barnes Life Membership Award

Rob Last
Michigan State University, East Lansing

Enid MacRobbie Corresponding Membership

Liwen Jiang
The Chinese University of Hong Kong, Sha Tin, New Territories

Excellence in Diversity and Inclusion Award

Tessa Burch-Smith
Donald Danforth Plant Science Center, St. Louis, MO

Excellence in Education Award

Dior Kelley
Iowa State University, Ames

Fellow of ASPB Award

Sona Pandey
Donald Danforth Plant Science Center, St. Louis, MO

Lucia Strader
Salk Institute for Biological Studies, La Jolla, CA

Miguel Vega-Sanchez
Bayer, Chesterfield, MO

Pradeep Kachroo
University of Kentucky, Lexington

Liwen Jiang
The Chinese University of Hong Kong, Sha Tin, New Territories

Jane Silverthorne Early Career Award

Adrien Burlacot
Carnegie Institution for Science, Stanford, CA

Lawrence Bogorad Award for Excellence in Plant Biology Research

Bonnie Bartel
Rice University, Houston, TX

Robert Rabson Award

Josh Vermaas
Michigan State University, East Lansing

Stephen Hales Prize

Rick Dixon
University of North Texas, Denton

100 YEARS OF *Plant Physiology*®

This year marks ASPB's flagship journal's centennial

In 1926, the first issue of *Plant Physiology* was published with an ambitious goal: to create a dedicated home for the rapidly advancing field of plant physiology. One hundred years later, that vision has grown into one of the world's leading journals in plant science, publishing research that has helped shape generations of discovery and advance our understanding of plants and their role in addressing some of the world's greatest challenges.

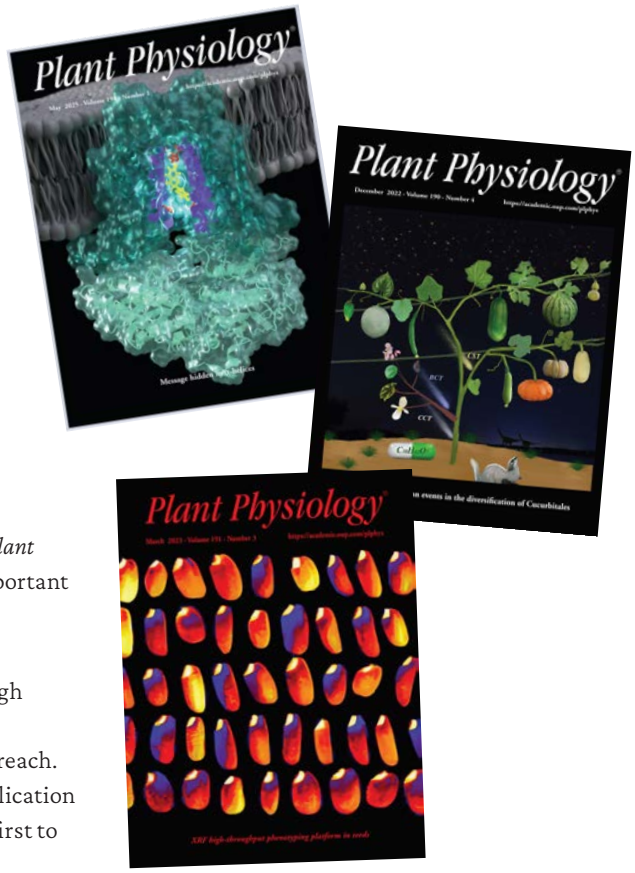
The journal's centennial was celebrated throughout Plant Biology 2026, in Ottawa, Ontario, July 18-22, 2026, with a special historical exhibit featuring a large-format timeline tracing the journal's evolution and historical artifacts that highlight the people, publications, and milestones that have defined its first century.

The story of *Plant Physiology* actually began before its first issue appeared. In 1924, members of the American Society of Plant Physiologists (now the American Society of Plant Biologists) recognized the need for a journal devoted exclusively to plant physiology. Under the leadership of Charles A. Shull, the Society launched the publication in 1926, establishing a scholarly forum that quickly became a cornerstone of the discipline.

Across the decades, successive Editors-in-Chief guided the journal through periods of extraordinary scientific growth. Leaders including Walter F. Loehwing, David A. Goddard, Allan H. Brown, Martin Gibbs, Maarten Chrispeels, Natasha Raikhel, Donald R. Ort, Michael Blatt, and current Editor-in-Chief Yunde Zhao each helped expand the journal's scientific scope while maintaining its commitment to rigorous, high-quality research.

As plant science evolved, so did *Plant Physiology*. The journal embraced important innovations in scholarly publishing, including:

- International expansion through strategic vendor relationships, extending the journal's global reach.
- The introduction of online publication and the transition from print-first to digital-first publishing.
- Modern editorial workflows that streamlined peer review and manuscript handling.
- Expanded research-integrity screening to strengthen confidence in the scientific record.



- Growth of a diverse international editorial team and the Assistant Features Editor program, helping cultivate the next generation of plant science communicators and publishing leaders.

The Editors-in-Chief of *Plant Physiology*. From top left: Charles A. Shull, Walter F. Loehwing, David Goddard, Allan H. Brown, Martin Gibbs, Maarten Chrispeels, Natasha Raikhel, Donald R. Ortt, Michael Blatt, Yunde Zhao.

Along the way, *Plant Physiology* marked milestones that reflected both its scientific influence and its commitment to innovation. The journal published its first cover featuring scientific imagery in 1992, celebrated its 75th anniversary in 2001, adopted open-access publishing options to increase access to research in the mid-2000s, and continually refined its editorial structure to better serve authors and readers.

Today, *Plant Physiology* continues to publish research spanning molecular biology, genetics, physiology, biochemistry, systems biology, synthetic biology, and beyond. While the methods and technologies have changed dramatically since 1926, the journal's mission remains consistent: to publish rigorous, impactful science that advances plant biology and serves the international research community.

Visitors to the Plant Biology 2026 centennial exhibit had the opportunity to explore this rich history firsthand through the commemorative timeline and a collection of historical journal artifacts, offering a unique look at how *Plant Physiology* has grown alongside the field it helped define.

As the journal enters its second century, *Plant Physiology* remains as committed as ever to scientific excellence, editorial leadership, and supporting discoveries that will shape the future of plant science for generations to come.

See a snapshot of our 100 years on the next page! »

100 YEARS OF *Plant Physi*

A century of discovery, innovation, and

March 1926
Volume 1, Issue 1 Published
The first issue of *Plant Physiology* is published, establishing what would become one of the world's leading journals in plant science. The founding editorial board includes Charles A. Shull, Charles B. Lipman, Burton E. Livingston, Francis E. Lloyd, and Carleton R. Ball.

1924 | 1925 | 1926 | 1930 | 1945 | 1953 | 1958

Charles A. Shull, the founding Editor-in-Chief of *Plant Physiology* and namesake of ASPB's Charles Albert Shull Award, initiated in 1971 by the Society to honor Dr. Shull.

A Vision for a Dedicated Plant Science Journal
The newly formed American Society of Plant Physiologists (ASPP) identifies the creation of a dedicated scientific journal as one of its highest priorities, recognizing the need for a publication devoted exclusively to plant physiology research.

January-December 1926
Building a Journal from the Ground Up
ASPP launches a national campaign to build support for the new publication, establishes an editorial board, selects the title *Plant Physiology*, and appoints Charles A. Shull as the journal's first Editor-in-Chief. By the end of the year, publication of the inaugural issue is officially authorized.

1926
Early Success
The journal publishes 426 pages in its first year, gains 86 library subscriptions, and helps drive ASPP membership to 217 scientists.

1930
Rapid Growth
By 1930, subscriptions to *Plant Physiology* have doubled to 264 libraries.

1945
Walter F. Loehwing is Appointed Editor-in-Chief
Loehwing was a student of Shull at the University of Chicago and went on to become Dean at the University of Iowa. Due to Loehwing's poor health resulting from a WWI injury, ASPP Treasurer J. Fisher Stanfield carried out much of the editing duties.

1953
David A. Goddard is Appointed Editor-in-Chief
Goddard was a University of California, Berkeley graduate and National Research Council fellow at the Rockefeller Institute before moving to the University of Pennsylvania and eventually becoming provost. He won the Hales Prize in 1948.

1958
Allan H. Brow
Appointed Ed
Brown studied
Goddard befo
moving on to t
Radiation Labo
at MIT, the Uni
of Chicago, an
finally, the Uni
of Minnesota,
he eventually
chairman.

2001 | 2000 | 1998

September 2005
Donald R. Ort Becomes Editor-in-Chief
Ort guides the journal through a period of scientific expansion and launches the influential Founders Reviews series.

2005

Mid-2000s
Open Access Transformation
As scholarly publishing evolves, *Plant Physiology* adopts open-access publishing options, helping expand access to plant science research worldwide.

January 2001
75 Years of Plant Physiology
The journal celebrates its 75th anniversary, marking three-quarters of a century of publishing groundbreaking plant science research.

75 *Plant Physiology*

May 2000
Natasha V. Raikhel Becomes Editor-in-Chief
Raikhel's leadership brings new energy and visibility to the journal. Submission rates increase dramatically between 2001 and 2003, reflecting the journal's growing influence and expanding scientific scope.

2000
A New Identity
Members approve changing the Society's name to the American Society of Plant Biologists (ASPB).

January 1998
Going Digital
The journal launches its online edition through HighWire Press, extending its global reach and marking a major step into digital publishing.

Mid 1990s
A New Editorial Structure
Editorial restructuring creates a streamlined board of Associate Editors and Decision Editors.

2013 | 2015 | 2016 | 2018 | 2020

Blatt introduced the Assistant Features Editor Program to *Plant Physiology*, as well as author services to strengthen published content.

January 2013
Michael Blatt Becomes Editor-in-Chief
Blatt broadens the journal's scientific scope and introduces innovations that strengthen engagement with the plant science community.

2015
Online-Only Publication
Reflecting changes in scientific publishing, *Plant Physiology* transitions to a fully digital format, ending nearly ninety years of print publication.

2016
Modern Editorial Workflows
The journal migrates to eJournalPress, streamlining manuscript submission and peer review.

2018
Research Integrity Enhancements
Expanded image-screening and publication-integrity procedures strengthen quality control and reinforce confidence in the scientific record.

2020
Partnership with Oxford University Press
ASPB partners with Oxford University Press for production, distribution, and publishing services, helping the journal navigate a rapidly changing scholarly communications landscape.

ology®

d scientific leadership

958

1963

1963
Martin Gibbs is Appointed Editor-in-Chief
Gibbs' appointment begins what will be a celebrated 25-year term with the journal. Gibbs is widely credited with expanding the journal and strengthening its reputation.

Longtime Editor-in-Chief of *Plant Physiology*, Martin Gibbs is the namesake of ASPB's Martin Gibbs Medal, presented biennially to an individual who has pioneered advances that have served to establish new directions of investigation in the plant sciences.

1987

1987
Modern Publishing Begins
ASPP establishes the position of Director of Publications, initiating a major modernization of the Society's publishing operations and laying the groundwork for future growth.

1992

July 1992
Maarten J. Chrispeels Becomes Editor-in-Chief
Chrispeels launches significant changes that reshape the journal:

- Eliminating publication backlogs
- Editorial restructuring
- Enhanced peer review processes
- Modernized journal presentation

1992
The First Cover Images
For the first time, scientific images appear on the journal cover, giving *Plant Physiology* a distinctive visual identity and highlighting the beauty of plant science research.

Volume 99, No. 3, the very first issue of *Plant Physiology* to feature a scientific image on the cover of the journal.

2022

2026

As the 10th Editor-in-Chief of *Plant Physiology*, Zhao ushers the journal to its Centennial, celebrating 100 years of publishing the best in plant biology research.

January 2022
Yunde Zhao Becomes Editor-in-Chief
Yunde Zhao assumes leadership of Plant Physiology and oversees an expanded editorial structure that includes Senior Editors, Associate Editors, and a growing Assistant Features Editor program designed to cultivate future leaders in plant science publishing.

2022
A Truly International Community
By 2022, authors publishing in Plant Physiology represent a global scientific community spanning North America, Europe, Asia, Australia, and South America, illustrating the journal's worldwide reach and influence.

2026
***Plant Physiology* Turns 100**
One hundred years after the publication of its first issue, *Plant Physiology* remains one of the world's leading journals in plant science. What began as a bold vision by a small group of plant physiologists has become a global platform for discovery, innovation, and scientific communication.

Over its first century, the journal has documented the transformation of plant biology, from studies of mineral nutrition and photosynthesis to genomics, systems biology, synthetic biology, and beyond. Throughout that evolution, *Plant Physiology* has remained committed to publishing rigorous, impactful science and serving the international plant science community.

100 YEARS

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

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MAILING OFFICES

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Take the survey at qrco.de/bdFEHu

ASPB staff are dedicated to serving our members.
We welcome your questions and feedback.

For quick response, email us at info@aspb.org.

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