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ASPBnews

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contents

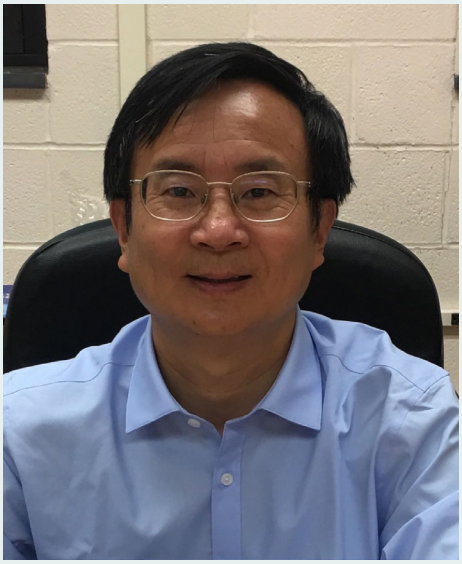
PRESIDENT'S LETTER

Celebrating ASPB Accomplishments and Welcoming the Future

BY HONG MA, ASPB PAST PRESIDENT

Greetings to ASPB members! As mentioned in my last letter, a key event during my time as ASPB President was the great ASPB Centennial Celebration, for which many worked so hard for several years. To recognize this important milestone, both *The Plant Cell* and *Plant Physiology* organized a set of review articles that present the advances in the understanding of key aspects of plant biology (https://doi.org/10.1093/plcell/koae076). These reviews and an article about ASPB history (https://aspb.org/about/history/) provide valuable references and educational materials for ASPB members and plant biologists in general. The ASPB Legacy Society Leadership Committee and Centennial Challenge Committee (LSLC/CCC) worked tirelessly to raise funds to support ASPB missions and to recognize those who have been long-term supporters of ASPB and the broader plant science community and who made major contributions to ASPB activities in serving its members, including training and mentoring young plant biologists, enhancing interaction and collaboration among plant biologists, and promoting plant biology to industry, government agencies, and the general public. A special symposium was organized at the Plant Biology 2024 to celebrate the accomplishments of ASPB and to honor Pioneers, Legacy Society members, and long-term contributors.

Speaking of the Plant Biology conference, we welcome ideas on how to make the annual conference valuable and attractive to all our members and the broader plant biology community. We want to hear from both early career and long-term members about the strengths and weaknesses of the conference. We recognize that attending the Plant Biology conference is a major commitment of time and resources; however, the conferences are still the leading forum and networking opportunity for ASPB members and the broader plant community. To make the meeting as accessible as possible, ASPB has kept the registration fee low, compared to the ever-increasing costs of running a conference, and we provide travel award support for many attendees.



Of course, we have been hard at work for another busy year for ASPB. One thing that comes to mind is Plant Biology 2025 in Milwaukee. There is an interesting recap in this issue that I encourage you to read.

It is also important to recognize that part of the ASPB's role in supporting plant biology is to engage government officials and industry representatives—and that role is

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.

even more important now. Over the years, ASPB has had regular discussions and consultations with funding agencies to understand the priorities of the agencies and to convey the excitements of plant biology discoveries and the promise of further investments in research and training. In fact, agency leaders who oversee plant biology support have regularly attended both national and regional conferences organized by ASPB and presented workshops to showcase the latest initiatives to ASPB members. The ASPB leadership team, including the Science Policy Committee, also regularly provide input on plant biology development and needs, and you can read several articles about this work elsewhere in this issue. ASPB members who work in industry also provide a vital link and have contributed to ASPB's mission via committee service and conference organization. Specifically, workshops that bring industry representatives in close interactions with other conference attendees on career options in industry have been very helpful to many early career members. These efforts can also benefit from great participation by ASPB members, especially those in industry.

Please remember that ASPB needs its members to drive its mission forward. The annual nomination process for ASPB's next leaders will be opening soon, so please nominate a candidate if you think someone you know is qualified when nominations open. Equally important is voting for a nominee in the election later on. So, stay tuned for the call to vote. I also encourage everyone to visit the ASPB website, which has a lot of useful information.

Thank you for being a part of ASPB and this community. It has been a challenging year for many of us, but together, we have a strong voice for plant biology.

Philanthropy – An American Society of Plant Physiologists/Plant Biologists Tradition

Since the founding of the Society in 1923-24, a philanthropic spirit has long been the hallmark of ASPP/ASPB members. A $20,000 donation by Charles A. Shull's wife, as well as financial contributions from several founding members, helped launch the Society. These funds were also used to create the Stephen Hales and Charles Reid Barns Awards, and they helped launch publication of the Society's journal, *Plant Physiology*.

Since then, multiple donations and bequests have supported and nurtured many aspects of the Society's functions. Included among them was a major gift of land and property from the Gude family that created the current headquarters of the Society in Rockville, MD. Others allowed creation of new awards, including the Robert Rabson Award, the Eric Conn Award, and the ASPB Innovation Prize for Agricultural Technology. In most instances, an initial request to the Society for creating a new award was supported by a major financial donation that was, in turn, leveraged to garner sufficient support to permanently endow it. This was the case with the most recently named award, the ASPB-Carnegie Winslow Briggs Mentorship Award. In this instance, an ASPB member offered a very generous match to any donations garnered by the Carnegie Institution, Briggs's employer; ultimately, over $120,000 was raised in less than a year.

Donations and bequests have also been used to support other aspects of ASPB's operations. For example, the subsidized childcare services (https://plantbiology.aspb.org/family-resources/) that ASPB provides at its annual Plant Biology meetings was funded initially through a temporarily restricted donation and later by a bequest from the estate of former ASPP president, Eli Romanoff. More recently, bequests to the Society totaling more than $500,000 have come from the estates of former NSF Biology Division Director, Mary Clutter, and two long time members of the Society, Jim Siedow and Mark Cohn. The donations from Clutter's and Siedow's estates were unrestricted, meaning that ASPB's board and senior staff have authority to direct use of these funds. In the case of the bequest from Siedow's estate, a portion was used to support additional SURF awards in 2023. Cohn's bequest stipulated that the Society periodically organize a symposium on seed biology, the donor's lifelong research passion. Other donations to ASPB have come in different forms, including equities.

Starting in 2016, 135 long-time ASPB members helped launch the Legacy Society as Founding Members (https://aspb.org/membership/aspb-legacy-society/), with each making a donation of $5,000 or more. According to ASPB's Gift Acceptance Policy, the ASPB Board of Directors intends to invest up to 90% of the donations received and use the dividends from these donations to provide financial support for ASPB activities that foster professional development and early career researcher–centered programs. The Legacy Society's primary goal is to nurture future generations of plant biologists and, thereby, ensure the health and longevity of the Society.

In anticipation of ASPB's Centennial, in 2019 ASPB's Board of Directors worked with the Legacy Society Leadership Committee to launch the Centennial Challenge, with a goal of raising $2.5 million in donations before the Centennial Plant Biology conference in Honolulu, HI. Among activities associated with the Centennial Challenge is recognition of a special group of plant scientists – ASPB Pioneers – many of whom helped make the Society what it is today. These individuals provided education and research training for many members of our community, and in some cases played leadership roles in ASPB and/or its journals. To date, more than 1,800 people, including many ASPB members, have donated to recognize the Pioneers and their contributions to ASPB and the broader plant science community.

Make Your Impact

If you are interested in exploring either unrestricted or restricted gifts to ASPB in your will or, if you are in or beyond your early 70s, from your IRS required minimum distribution, please speak with your financial advisor and then get in touch with ASPB's CEO, Crispin Taylor, at ctaylor@aspb.org. Consult ASPB's Gift Acceptance Policy at **bit.ly/4qMqJRt** (and share it with your financial advisor, too!) for more information on the kinds of gifts and bequests that ASPB is able to accept.

Mary Helen M. Goldsmith

MAY 2, 1933 – OCTOBER 2, 2024

Mary Helen M. Goldsmith (née Martin) was elected President of ASPB in 1990, the second woman to hold the office. Prior to that, her service to the Society included terms on the Executive Committee, the Board of Trustees, and the Plant Physiology editorial board.

Born in Boston in 1933, Mary Helen grew up in College Park, Maryland, the precocious nature-loving daughter of a math professor. She won a Westinghouse Talent Search scholarship when she was 17. After earning a B.A. degree in Zoology and Chemistry from Cornell University in 1955, Mary Helen studied auxin transport at Harvard with Professor Kenneth Thimann. She obtained her PhD in Plant Physiology from Harvard-associated Radcliff College because, in 1959, Harvard did not admit women. The mechanism of polar auxin transport was a hot topic then and it posed unique questions. How could a small molecule like auxin move so well down but not up the oat coleoptile? How was this polar transport so tightly and reversibly tied to oxygen availability while auxin uptake was not? Mary Helen continued to investigate these questions when she moved to Yale University with her neuroscientist husband, Timothy Goldsmith. They had been a couple since a high school play first brought them together. Tim advanced up the faculty ranks but, in 1961, a woman could not expect equal opportunity at a university. Mary Helen was first a Research Associate (1961-1963), then a Lecturer (1963-1973), and eventually admitted to a track that led to a tenured professorship in 1984. While their two children were in school, Mary Helen's position was 50%. However, as she explained to a Hartford Courant reporter curious about the (slowly) rising status of women in science (Oct 17, 1983), the workload was 100%.

In the 1960s, Mary Helen's research relied on 14C-labeled IAA to track auxin transport through tissues. In the 1970s, it began to feature microelectrode measurements of the electric potential differences across the plasma membrane and tonoplast and the degree to which cells in a tissue were electrically coupled. In 1977, Mary Helen synthesized this research field's results in an influential review article entitled "The Polar Transport of Auxin." This article was important because it clearly explained how thermodynamically active protons pumps, the plasma membrane's electrical potential difference, the weak acid nature of IAA, and the transport of auxin anions through thermodynamically passive channels could combine to move the hormone from cell to cell through the plant. It would be several more years before the inferred transporters were molecularly and genetically identified.

In the 1980s, Mary Helen used pharmacological agents to study auxin transport into plasma membrane vesicles and tissue sections, following the logic that a specific inhibitor could be leveraged to identify ion channels and other transporters.

In the 1990s, neuroscientists developed the patch clamp technique that revolutionized the study of ion channels. Mary Helen brought this new technology to her lab, even though it was difficult to apply to plant cells, and she embraced Arabidopsis, the 'new kid on the block' as the subject. Mary Helen was among the first to characterize ion channels in Arabidopsis using the patch clamp technique.

Mary Helen's lifelong love of nature complemented her academic interest in the fundamentals of membrane transport. Yale benefited from this, as Mary Helen revitalized its Marsh Botanical Gardens and established its first Environmental Studies Program. Yale University comprises fourteen residential colleges, where undergraduate students eat, sleep, and grow. From 1987 to 1994, Mary Helen was the Master of Silliman College, the largest of the fourteen. She and her husband lived onsite, interacting with students and solving problems each day. They hosted teas and music ensembles that brought together a cross section of the academy. It is heartening to think of all those who were touched by Mary Helen's lighthearted graciousness both on and off campus, and the women in science who saw her as a role model.

Select publications

Goldsmith, M.H.M. and Thimann, K.V. (1962). Some characteristics of movement of indoleacetic acid in coleoptiles of Avena. I. Uptake, destruction, immobilization, & distribution of IAA during basipetal translocation. Plant Physiology 37: 492–505

Goldsmith, M.H.M. (1967). Separation of transit of auxin from uptake: average velocity and reversible inhibition by anaerobic conditions. Science 156: 661–663

Goldsmith, M.H.M. (1977). The polar transport of auxin. Annual Review of Plant Physiology 28: 439–478

Goldsmith, M.H.M., Goldsmith, T.H. and Martin, M.H. (1981) Mathematical analysis of the chemosmotic polar diffusion of auxin through plant tissues. Proceedings of the National Academy of Sciences USA. 78: 976–980

Edwards, K.L. and Goldsmith, M.H.M. (1980). pH-Dependent accumulation of indoleacetic acid by corn coleoptile sections. Planta 147: 457–466

Sussman, M.R. and Goldsmith, M.H.M. (1981). The action of specific inhibitors of auxin transport on uptake of auxin and binding of N-1-naphthylphthalamic acid to a membrane site in maize coleoptiles. Planta 152: 13–18

Bates, G.W. and Goldsmith, M.H.M. (1983). Rapid response of the plasma-membrane potential in oat coleoptiles to auxin and other weak acids. Planta 159: 231–237

Spalding, E.P. and Goldsmith, M.H.M. (1993). Activation of K+ channels in the plasma membrane of Arabidopsis by ATP produced photosynthetically. The Plant Cell 5: 477–48

Brian Larkins

AUGUST 12, 1946 – JANUARY 19, 2025

Brian Allen Larkins passed away peacefully at his home in Tucson, Arizona on January 19, 2025, with his wife and family nearby. Brian was born in Bellville, KS to Jean and Ethel Larkins on August 12, 1946. He grew up on a small farm east of Chester, Nebraska where he attended public school through his junior year. He was distinguished by his diminutive size and limited spelling ability, both of which he overcame to become wildly successful in both his personal and professional life. His early years of working tirelessly on his family's farm instilled in him a tremendous work ethic that remained throughout his life.

Brian graduated from high school in York, Nebraska in 1964 and enrolled at the University of Nebraska, majoring in biology. His freshman year, he was inspired by his botany professor, Dr. John Davidson, to pursue a PhD degree in botany, which he began after a challenging year teaching high school biology in Wavery, Nebraska. Brian received a PhD in botany from the University of Nebraska in 1974. His dissertation research developed a technique for isolating messenger RNAs (mRNAs) from plant and animal cells. Brian moved to Purdue University in 1975 for postdoctoral research, where his work led to the isolation and characterization of mRNAs encoding zeins, the major seed storage protein in maize. This led to the characterization of zein genes and other research that helped launch the field of plant molecular genetics and its application to agricultural crop improvement. Over his career, Dr. Larkins investigated mutations that affect development of the maize seed and influence its nutritional quality. Mentorship of his students and research associates resulted in more than 300 publications and 20,000 research citations.

Brian served his profession in a variety of leadership roles. He was Head of the Plant Sciences Department at the University of Arizona from1988-1994, where he helped create an internationally recognized academic unit. He served as Associate Editor and then Editor-in-Chief of The Plant Cell (1989-1998), and as President of the International Society of Plant Molecular Biology (1991) and President of the American Society of Plant Physiologists (1999). After his retirement from the University of Arizona, he served as Associate Vice Chancellor for Life Sciences at the University of Nebraska (2012-2017), where he contributed to development of an interdisciplinary PhD in computational biology. His leadership roles and research publications resulted in many recognitions, including endowed professorships: the Hovde Distinguished Professor at Purdue University, Porterfield and Regents Professor at the University of Arizona, and the John Davidson and Marian Fuller Presidential Chair at the University of Nebraska. In 1996, he was elected to the US National Academy of Sciences, one of the most prestigious recognitions a scientist can receive. Brian received multiple research awards from the American Society of Plant Biologists (ASPB), including the Charles A. Shull award for research innovation by a scientist under 40 years of age, the Stephen Hales Prize for career-long contributions to plant science, and the Charles Reid Barnes Life Membership Award.

In retirement, Brian remained an ardent supporter of ASPB, dedicating countless hours to establishing and becoming a founding member of the Legacy Society. He also developed the Pioneer of ASPB program, and the fundraising efforts he initiated have yielded over $3 million of donated funds that will help ensure the health and longevity of the Society and its capacity to nurture future generations of plant biologists.

Outside of his professional endeavors, Brian was a loyal and loving husband and a dedicated, father, stepfather, and "papa." He was passionate about education and promoting a love of learning in others. He enjoyed cycling, playing golf, reading, listening to classical music, and supporting his beloved Nebraska Huskers. Brian will long be remembered for his kindness and inclusion of others, his generosity and philanthropy, and leaving the world a better place.

Brian is survived by his wife Ardie Larkins, sons Aaron and Philip Larkins of Tucson, AZ, stepdaughters Julie (Tim) Thompson of Carlsbad, CA, Sandy (John) Stribling of Tucson, AZ, Kelly Delforge of Phoenix, AZ, and his siblings: Rodney (Judy) Larkins of Hudson, WI, Sally Beuhler of Chelsea, MI, Andrea (Keith) Tyler of Overland Park, KS, Gerald Blake Larkins of Diller, NE, and Casey Larkins of Lincoln, NE. He was preceded in death by his first wife Pamela Jo (Ramsey) Larkins, and brother Curtiss Larkins.

(Adapted with permission from https://www.dignitymemorial.com/obituaries/tucson-az/brian-larkins-12206702)

Russell Lewis Jones

1941 – 2025

BY LINCOLN TAIZ, WENDY K. SILK, AND ELEANOR G. CRUMP

Russell Lewis Jones, highly cited plant scientist and beloved mentor, Professor Emeritus at the University of California at Berkeley, died July 1, 2025, at the age of 84.

Early Life and Education

Russell's scientific work centered on determining the role of the aleurone layer of the endosperm in controlling seed dormancy and plant germination. His childhood contained seeds of his life's work. Born in 1941 in the village of Dyserth, North Wales, he grew up surrounded by the rolling hills and farmlands that would inspire his lifelong passion for plants. His mother's family were farmers, and as a child he spent a great deal of time on his grandfather's farm. Russell enjoyed recounting that one of his grandfather's most valuable crops was malting barley. Each Fall a representative from the malting company that bought the grain came by to test how much α-amylase was present in the grain, as too much of this enzyme made the crop useless for malting. These childhood experiences foreshadowed his long career discovering controls on α-amylase production in seeds. Ultimately his work provided a molecular framework for understanding how seeds remain dormant under unfavorable conditions and how they resume growth when circumstances improve—a topic of fundamental importance for agriculture and food security.

Escaping the limited science curriculum at his rural secondary school, Russell's curiosity and determination propelled him forward. He was only 16 years old when he started boarding at college. He went on to University of Wales, Aberystwyth where he met his future wife, Frances Margaret Daniel, who was also studying biological science. He got his BA from Aberystwyth, married Frances, welcomed their first child, and started graduate work—all in 1962, in his words, "a banner year."

Russell completed his PhD degree at Aberystwyth with plant physiologist I.D.J. Phillips. In his doctoral work he showed that the young leaves and shoot and root apices were sites of gibberellin formation in sunflower plants.

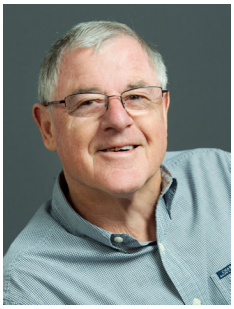
Academic Career and Scientific Achievements

After completing his doctorate, Russell undertook postdoctoral research at the Plant Research Laboratory at Michigan State University. There, he honed his expertise in plant hormone signaling and practiced the collaborative spirit that would define his career.

In 1966, during the turbulent years of the Free Speech Movement, Russell joined the faculty of the University of California, Berkeley as an assistant professor in the Department of Botany. At the age of 30 he had tenure—and three children! Berkeley would become his academic home for almost six decades.

Throughout his career, Russell made seminal contributions to the understanding of how plants perceive and respond to environmental cues, particularly through the lens of hormonal regulation. He focused on cell physiology and pioneered the use of various types of microscopy, fluorescent reporter dyes, patch clamping, organelle isolation, and biochemical methods. His work produced functional understanding of cell walls, tonoplast, protein storage vacuoles, lipid bodies, and endoplasmic reticulum. His research on the aleurone layer of barley and Arabidopsis was especially influential. With his many students and colleagues, he elucidated the complex interplays among gibberellic acid, abscisic acid, calcium, reactive oxygen species, and nitric oxide in regulating seed dormancy, germination, and programmed cell death.

Leadership, Service, and Mentorship



Russell's energy, flow of ideas, and buoyant optimism attracted many collaborators. At Berkeley he served as major professor to 24 PhD students and hosted many postdocs and visiting scholars from all over the world. He was a constant presence in the laboratory, melding people together and expecting everyone's best. He insisted on proper teatime in the lab, twice a day—a great time of community. He was a passionate teacher, known for his engaging lectures, thoughtful guidance, and genuine care for his students. Many of his mentees have gone on to distinguished careers in academia, industry, and public service.

As chair of Berkeley's Department of Botany from 1981 to 1986, Russell guided the department through a period of significant growth and transformation. His leadership extended to national and international influence in plant science. He served on the editorial board of the *Annual Review of Plant Biology* and its successor *Annual Review of Plant Physiology and Plant Molecular Biology* for two and half decades, from 1975 through 2001. He served as president of the American Society of Plant Physiologists (now the American Society of Plant Biologists) from 1993 to 1994, championing initiatives to support young scientists and promote interdisciplinary collaboration. As managing editor of the journal *Planta*, he further helped shape the direction of plant science research worldwide. Four sabbaticals in Canberra, Australia were particularly productive. He spent a sabbatical

in Nottingham, U.K. and worked as a senior scientist in Göttingen.

Among his extensive service contributions to the University of California, Russell particularly enjoyed serving as Director of the Education Abroad Program in Australia and as a member of the Board of Trustees of the Jepson Herbarium. He also served on scientific advisory boards in both the United Kingdom and the United States, offering his expertise to guide research funding and policy.

Honors, Awards, and Lasting Impact

Russell's contributions were recognized with many honors including a Guggenheim Fellowship in 1972. He was elected a fellow of the American Society of Plant Biologists in 2007 and was awarded the Berkeley Citation in 2010 for his "extraordinary service to the university." He was awarded Doctor Honoris Causa, Mendel University of Agriculture, Brno and Université Paul Sabatier, Toulouse.

A prolific author, Russell published over 200 journal articles and book chapters. He also co-authored two major textbooks, *The Molecular Life of Plants* and *Biochemistry & Molecular Biology of Plants.* His research has been cited thousands of times, and the recent citations demonstrate that his insights into plant signaling and seed biology continue to influence scientists around the globe.

Russell was a tireless advocate for international collaboration and scientific exchange. Besides hosting many international students and visitors in his lab, he organized and participated in conferences and workshops on six continents, fostering dialogue and cooperation among plant biologists from diverse backgrounds.

Personal Life and Legacy

Russell and Frances shared a deep appreciation for both English and Welsh culture, and visitors found their home filled with music, laughter, and lively conversation. Russell was known for his warmth, humor, generosity, and pragmatic "can do" spirit—qualities that endeared him to his many close colleagues, friends, and students.

Outside the laboratory, Russell enjoyed hiking, gardening, and exploring the natural beauty of California and Europe, especially his native Wales. He was a gourmet foodie, a connoisseur of fine wines, a patron of both British tea breaks and Chinese restaurants; and he delighted in sharing stories from his youth and travels. He was an avid soccer fan—besides playing, he was a respected coach and referee.

Russell Lewis Jones will be remembered not only for his scientific achievements but for his kindness, wisdom, and unwavering dedication to the pursuit of knowledge. He will be deeply missed.

Russell was preceded in death by his wife Frances. He is survived by their three children, Deborah, Matthew, and Kathryn, their families, his partner Else Vellinga, a brother, and a global community of colleagues and former students who mourn his passing and celebrate his extraordinary life.

Please visit *https://qrco.de/bgRUHy* or scan the QR code to share memories at a site hosted by the UC Berkeley Department of Plant and Microbial Biology.

Hans Bohnert

SEPTEMBER 8, 1944 – MAY 21, 2025

We regret to inform you that our dear science mentor, boss, troublemaker, and of course beloved husband and father, Hans Bohnert passed away the morning of May 21, 2025 of complications from a fall several weeks prior. He will be greatly missed. Hans was a remarkable person, full of energy, curiosity, passion, and contradictions. Hans is survived by his wife, Regina, their two sons, and four grandchildren, as well as his brother, Dieter.

Our world is forever different because of Hans' influence, whether at home, in the lab, at conferences, or socially. His work at the University of Arizona, on the *Plant Physiology* journal Editorial Board, at the National Science Foundation, at the University of Illinois, and in many collaborations with researchers around the world greatly impacted the field and helped shape a multitude of scientific careers.

To learn more of Hans Bohnert's contributions to our plant biology community, please visit his ASPB Pioneer Member page.

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Welcome New Members of ASPB!

Members joining Oct. 1, 2024 through Feb. 1, 2025. Information listed as provided by member.

Susan Abernathy
Joan Acaso
Ashna Adhikari
Jakob Adkins
Syed Ovais Aftab
Nazir Ahmad
Gyeongik Ahn
Ademola Aina
Mohammad Alatoum
Mohammad Foteh Ali
Burcu Alptekin
Trinity Alston
Katelyn Amstutz
Leela Appili
Reed Arneson
Allison Arp
Hudson Ashrafi
Mahnaz Azad
Juan C Baca Cabrera
Rachel Bai
Ethan Baker
Mayank Bangari
Mark Beilstein
Brandon Bendickson
Santosh Bhandari
Faith Blom
Jack Bolado
Renata Bolognesi
Gabriela Borja
Claire Brehelin

Sydneye Bronson
Abigail Bruzual Lopez
Yogev Burko
Pablo Calzadilla
Laura Carmona
Matthew Carswell
Bethany Cates
Vincent Cerbantez
Jia Chae
Fang Chang
Hao-Xun Chang
Stella Chen
Kuo-En Chen
Xiaotong Chen
Yun-Chu Chen
Chimobi Chikwendu
Hui-Kyong Cho
Erin Cushing
Kristy Daniel
Thomas Wilbur Davis
Lilliana De Salas
Jan Debaene
Tingrong Deng
Anna DiBattista
Jiaqing Dong
Shannon Donnelly
Kate Dooling
Bedasa Dosho
Brian Downes
Kate Dreher

Viktoria Dubinin
Megan Duersteler
Joseph Edwards
Deniz Ertem
Ryan Espinoza
Jeff Fagerlund
Qian Feng
Maria Flores-Tornero
Barney Geddes
Giulia Ghirardello
Libia F. Gómez-Trejo
Jorge González-Villagra
Nicole Gorman
Goutom Goswami
Nicholas Grebenok
Sara Greenfield
Rory Greenhalgh
Tania Gupta
Corri Hamilton
Madison Hamlin
Seong Ju Han
Ruiduo Han
Sandunika Hangarapitiya
Muhammad Haroon
Briana Hashim
Rifa Fadhilah Munifah Hasibuan
Adelaide Hazen
Jesseca Hemminger
Savannah Himebaugh

Danielle Hoffmann
Katerina Holan
Loghan Holland
Sarah Holmes
Shakil Hosain
Md Sabbir Hossain
Anna Hovious
Yang Hsu
Claire Hudson
Erin Huiting
Zawar Hussain
Victoria Inlow
Aafia Iqbal
Jannis Jacobs
Rajdeep Jaswal
Mandeep Kaur Jauhal
Laia Jené
Austin Jensen
SongYi Jeong
Matthew Jetton
Myung Geun Ji
Jianjun Jiang
Zhenxiong Jiang
Guillermo Jimenez Aleman
Ilhyeong Jo
Chazz Jordan
Antone Jung
Nitin Kamble
Yumin Kan
Selvaraju Kanagarajan

Welcome New Members of ASPB!

Members joining Oct. 1, 2024 through Feb. 1, 2025. Information listed as provided by member.

April Kaneshiro
Farah Kanwal
Jagadis Gupta Kapuganti
Mackenzie Kasarda
Kristen Kater
Volodymyr Kavetskyi
Dmitry Kechasov
Toi Ketehouli
Madiha Khan
Muhammad Aamir Khan
Gwendolyn Kirschner
Bailey Kleven
Kyle Koch
Renuka Kolli
Arvind Kumar
Ritesh Kumar
Sareeka Kumari
Alicja Kunkowska
Brandon Larsen
Kai Chun Lee
Sarah Lempriere
Weiya Li
Kangping Li
Xiaochong Li
Ying Li
Wenying Liao
Alexander Liu
Wei Liu
John Lovell
Fang Luo
Chinh Luu
Kouassi Dominique Magnonde
Josephine Maidment
Hanna Makowski
Pablo Manavella
Elliott Marston
Ian McCahill
Madison McGregor
Francisco Medina Paz
Karina Medina-Jimenez
Md Shabab Mehebub
Joshua Melnick
Giuliana Mendoza
Ananda Menon
Livia Merendino
Todd Michael
Marzieh Moradifar
Farvehsadat Mostafavineyshabouri
Srijana Mukhia
Patrick Murphy
Zachary Myers
Brendon Myers
Mohammad Al Mahmud Un Nabi
Akira Nakamura
Samia Nawaz
Pei Qin Ng
Lily O'Connor
Camellia Okpodu
Rory Osborne
Xenia Osterhout
Sydney Ostlund
James O'Sullivan
Ryen Padilla
Dexter Pahayo
John Palka
Parker Parker
Olwen Paterson
Maria Peacock
Calvin Perkins
Sowmya Poosapati
Sushanthi Poovendhan
Dominic Provancal
Kelsey Pryze
Dinesh Pujara
Maxwell Quanrud
Margot Raffeiner
Harsh Raman
Megan Ramsett
Kaili Renken
Choong-Hwan Ryu
Kishan Saha
Madelyn Schaut
Danielle Schoenecker
Madeleine Seale
Gayathri Senanayake
Athira Sethu Madhavan
Patrick Shih
Gyeong-Im Shin
Sophia Shomper
Ritu Singh
Gurkirat Singh
Cailin Smith
Marc Somssich
Heejeong Son
Christiane Stanek
Meg Staton
Melissa Steele-Ogus
Binita Subedi
David Susko
Ryan Swanson
James Szot
Javaria Tabusam
Junpei Takano
Mizuki Takenaka
Keiichiro Tanigawa
Mallorie Taylor-Teeples
Addie Thompson
Komal Thukral
Hila Toporik
Héctor Hugo Torres Martínez
Alexandria Tran
Sharanya Tripathi
Yi-Wen Tseng
Fitrat Ullah
Liia Valeeva
Dilrini Vanrooyen
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The ASPB Science Policy Committee: What It Is and What It Does

BY GEORG JANDER

After less than a year as a member of ASPB's Science Policy Committee (SPC; https://aspb.org/about/committees/#science-policy-committee-members), I was appointed chair of the committee in October 2023. It was a steep learning curve, but I received lots of help and advice from the previous chair, Tessa Burch-Smith, ASPB CEO Crispin Taylor, and the staff at Lewis-Burke Associates (LBA), a government relations firm that specializes in issues related to higher education and research. I would like to take this opportunity to explain the purpose of the SPC and describe some of our activities.

About the SPC

The SPC's mission is to advocate for plant science and plant scientists, primarily with the US federal government. Indeed, the SPC engages in numerous advocacy activities to advance the interests of the ASPB community. One major focus area for our advocacy is securing and increasing funding for plant science research, both through the annual federal budget appropriations process and through legislation that authorizes major programs. Another major focus area is on expanding support for training the next generations of plant scientists. Other topics that the committee addresses include ensuring access to common resources like databases, encouraging investments in the bioeconomy, and supporting efforts to mitigate the effects of climate change. Although many of these topics can be politically charged, the SPC works in a non-partisan way to advance these issues for the benefit of ASPB membership and the wider society.

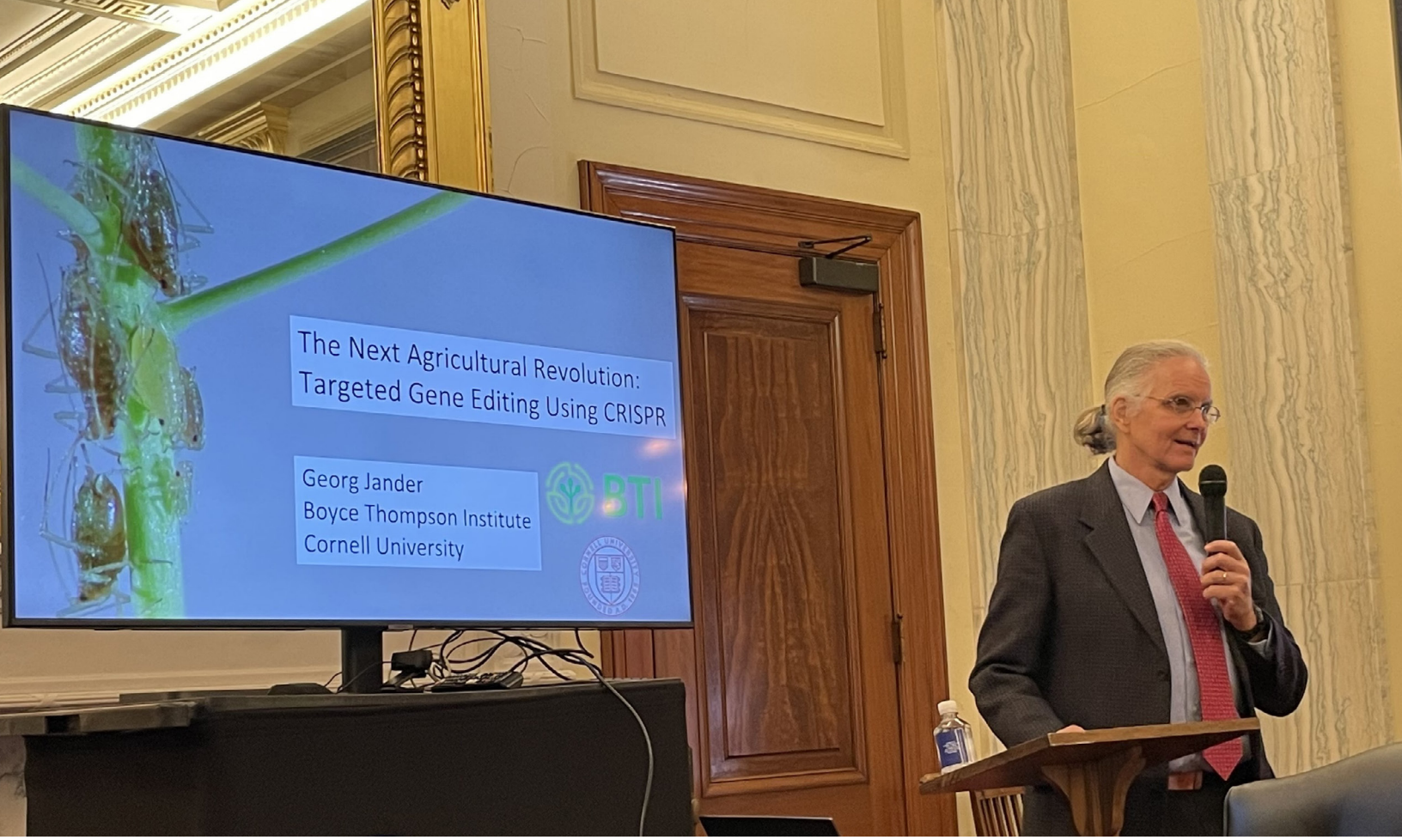
Advocacy Activities

To achieve its goals, the SPC undertakes a variety of activities to facilitate engagement with the government, funding agencies, and other scientific and professional societies. Because there is undoubtedly strength in numbers, along with other societies, universities and interest groups, we sign on to dozens of letters that address funding issues and specific legislative issues or bills. Many of these letters are archived on the ASPB website at https://aspb.org/advocacy/science-policy-issues/. I have also participated in a presentation about the use of CRISPR in agriculture, as part of a Congressional Lunch-and-Learn seminar series in the Russell Senate Office Building, together with two industry representatives, Dan Jenkins from Pairwise and Emily Negrin from Inari. With assistance from LBA, I also had the opportunity to discuss plant research funding with staff in the offices of three of my local New York State congressmen (Senator Chuck Schumer, and Representatives Marc Molinaro and Brandon Williams).

Another important outreach activity of the SPC has been our Hill meetings. Each Spring, as the President's budget proposal is being debated and Congressional offices are establishing their own funding priorities, members of the SPC meet with leaders of the federal agencies that fund most plant science research: the USDA, NSF, and Department of Energy, as well as representatives of other agencies, including NASA and the NIH. At these meetings we seek to determine the evolving research interests of each agency and then convey these interests to individual Congressional offices in subsequent meetings. Since the pandemic, these meetings have been held virtually; nevertheless, they have been a vital part of ASPB's advocacy efforts. We also engage in educational activities that inform legislative and agency staff on scientific topics pertinent to plant science, and on occasion we work with ASPB members' institutional legislative affairs staff to bring Congressional representatives to campus research labs.

The SPC has also become active in developing responses to formal requests for input from the federal agencies as they consider policy changes and develop new research programs that incorporate plant science. We have responded to an Animal and Plant Health Inspection Service (APHIS) request for comments regarding proposed exemptions for organisms modified or produced through genetic engineering, and to an Advanced Research Projects Agency - Energy (ARPA-E) request for information regarding plant genetic engineering for energy applications. The latter response may help to influence the design of a future ARPA-E program focused on the development of tools to enable plant genetic engineering and synthetic biology. We have also engaged directly with the White House Office of Science Technology and Policy (OSTP), which coordinates Federal research policy across the government. OSTP invited ASPB to submit a white paper on plant science with a focus on the bioeconomy and workforce development, a submission that was well received and has led to follow-up discussions with OSTP.

In addition to the OSTP, the SPC has made efforts to engage with non-traditional sources of funding for plant science research including NASA, the Department of Defense, and the



SPC member Georg Jander talking about the agricultural applications of CRISPR in a Congressional Lunch-and-Learn series at the Russell Senate Office Building.

NIH. We recently met with Dorit Zuk, Deputy Director at the National Institute of General Medical Sciences (NIGMS), who provided her insight into plant research funding opportunities at the NIH. This information is also available in an article written by Dr. Zuk for this issue of *ASPB News*.

All members of the SPC contribute to these advocacy efforts. Those members are configured a little differently from the members of other ASPB committees. Like all other committees, we strive for diverse appointments that are representative of ASPB's overall membership and consistent with the society's DEI goals. An additional consideration, however, is geographic representation. Because one of our major activities is to petition Congress in support of causes favored by ASPB, we also consider the composition of powerful Congressional committees and subcommittees that set policy and appropriations for federal agencies that fund plant biology research and other issues pertinent to ASPB. Based on the composition of these Congressional committees, we select SPC members from relevant Congressional districts and/or States to ensure that we can personally engage with our elected representatives in both Houses of Congress to discuss ASPB's concerns. Election results can upend our carefully laid plans, so we try to maintain some flexibility with this approach.

President Trump's second term, along with Republican majorities in both Houses, have highlighted the need for ongoing engagement with the current administration and Congress. To assist in these and all ASPB's advocacy efforts, the SPC works in close collaboration with LBA staff, who provide insight into government processes and help us develop effective strategies for engaging with the government and other professional societies to further ASPB's interests. LBA contributes to the SPC in myriad ways, including helping organize meetings with Congressional representatives and delegations, assisting with the preparation of Congressional testimony, producing comprehensive summaries on important Congressional activities, and coordinating interactions among numerous professional societies and other advocacy groups.

Now, one does not need to be a member of the SPC to engage in advocacy on ASPB's behalf. Indeed, writing, emailing, or calling your Congressional representatives' offices as a private citizen is a fantastic way to advance ASPB's efforts. The SPC occasionally puts out calls for just these actions from the general membership, so please pay attention and help amplify our efforts. And of course, if you are interested in the possibility of joining the committee, please reach out to ASPB President-elect, Tessa Burch-Smith. Serving on the SPC is an excellent way to contribute to our goals as a society, and it's also a wonderful way to learn more about how our government works.

Note: This article is adapted from one written by Tessa Burch-Smith and published in the Spring 2022 issue of the ASPB News.

When scientists speak together, *policymakers listen.*

By joining the efforts of ASPB's Science Policy Committee, you'll help shape policies that fund discovery, sustain research careers, and strengthen our scientific future.

Add your voice to a growing movement for plant science with the advocacy tools on the ASPB website:

DOWNLOAD AND CUSTOMIZE letter templates

SEARCH for your representative's contact information

REVIEW talking points for meetings with your members of Congress

EXPLORE key US government resources to inform your communication

Get started today!

» *aspb.org/advocacy*

FEATURE

Amplifying Voices

Coalitions Bring ASPB Advocacy to the Big Stage

A decade ago, the U.S. Congress was laboring to pass an already-expired Farm Bill. House and Senate Agriculture Committee members and their staff were working hard, but political realities made it difficult to move forward. Democratic President Barack Obama had support from a Democrat-controlled Senate, but the Republican-majority House initiated a stand-off that forced the 2012 Farm Bill negotiations into 2014. Sound familiar? In light of today's massive political forces, how can ASPB—how can anyone—influence or achieve their goals? One way is to work in coalitions.

Lewis-Burke Associates is the government relations firm ASPB works with to make sure its voice is heard, and, by working together, ASPB's activity in coalitions is one of the many strategic ways the Society punches well above its weight. For example, ASPB has been part of a coalition of more than 50 organizations in signing a letter addressed to the House and Senate Agriculture Committees asking for $8 billion (with a B!) in mandatory funding for food and agriculture research, Extension, facilities, and education in the most recent Farm Bill under negotiation. The Society also signed a letter asking Congress to include language that would compel the White House to continue coordinating microbiome research; another in support of soil carbon measurements, monitoring, reporting, and verification (MMRV) and research; and, more urgently, letters calling for the protection of federally funded science.

What can all these letters accomplish? Back in 2012, Senate Agriculture Chairwoman Debbie Stabenow (D-MI) signaled her interest in using the upcoming Farm Bill to authorize and fund a foundation that would support and raise funds for research complementary to U.S. Department of Agriculture National Institute of Food and Agriculture's (USDA NIFA's) programs. ASPB saw this as an opportunity to bring new dollars to agriculture research, but others were concerned—would support for this new program take funding away from NIFA? ASPB needed to drum up support for Senator Stabenow's vision while ensuring uncompromised funding for NIFA's programs, and ASPB couldn't do it alone.

With support from a whole coalition of supportive scientific societies, organizations, and industry groups, ASPB not only wrote letters but also coordinated with coalitions like the Supporters of Agricultural Research (SoAR) and the National Coalition for Food and Agriculture Research (NCFAR) to schedule and attend meetings with congressional staffers, organize conversations with NIFA leadership, and host discussions among stakeholders. With the passage of the 2014 Farm Bill, the new Foundation for Food and Agriculture Research (FFAR) became a reality, in no small part due to the diligent coalition work ASPB had pursued.

Because Farm Bill legislation comes up for debate only every five years, it is strategic for ASPB to weigh in on issues important to plant biologists as those new bills are written, but there are many issues of considerable importance to plant biologists that are not touched by USDA policy alone and that arise more often than twice a decade. For example, ASPB and Lewis-Burke regularly work with the Coalition for National Science Funding, which advocates for a range of issues related to NSF, with the Energy Sciences Coalition, which supports funding for the DOE Office of Science, and with the Nagoya Protocol Action Group, a group that disseminates information to members about access to and utilization of international genetic resources. Additionally, ASPB and Lewis-Burke have been working with a biotechnology-focused coalition to write letters as two agencies, FDA and EPA, construct their gene editing policies.

In addition to achieving the power of a unified voice through coalition letters, active participation in coalitions builds trust and respect in the stakeholder community. When ASPB is known as a powerhouse of involvement, it becomes more likely to be asked to participate in additional advocacy, such as speaking at briefings or events and

participating in exhibitions or stakeholder meetings with congressional staff and agency leaders. These opportunities serve to increase ASPB's visibility and elevate plant science issues among a crowded federal R&D landscape.

Just as ASPB and Lewis-Burke work with myriad groups to achieve results, remember that you can too. Science policy does not only happen in Washington, DC—it happens everywhere, and just as ASPB works with coalitions to maximize its impact, you can too. Get involved with ASPB committees, with your home institution, with local government, or with local groups where plant science does or could have a bigger role. Being present and contributing to causes you feel passionate about can have positive reverberations for years to come, both for plant science and for your career, often in ways that are hard to anticipate. As ASPB and Lewis-Burke work with stakeholders across the federal advocacy spectrum to ensure plant biology is well represented in federal research and policy, we encourage you to get active in your own community to promote the promise and opportunity that plant biology holds for food, health, energy, and to inspire the next great innovator.

FEATURE

Plant Biology Research Supported by the National Institute of General Medical Sciences (NIGMS)

BY DORIT ZUK, PHD, DEPUTY DIRECTOR, NIGMS

What plant research does NIGMS fund?

NIGMS is one of the 27 Institutes and Centers that make up the National Institutes of Health (NIH), each of which has a distinct mission and funding priorities (https://www.nih.gov/institutes-nih/list-nih-institutes-centers-offices).

NIGMS supports basic research that increases our understanding of biological processes and lays the foundation for advances in disease diagnosis, treatment, and prevention. NIGMS-funded scientists investigate how living systems work at a range of levels—from molecules and cells to tissues and organs. Additionally, to ensure the vitality and continued productivity of the research enterprise, NIGMS provides leadership in supporting the training of the next generation of scientists, broadening participation in the scientific workforce, and developing research capacity throughout the country.

A small percentage of the research funded by NIGMS is conducted in plants. Specifically, in fiscal year (FY) 2023, NIGMS funded 105 plant-related grants—about 1% of all NIGMS grants funded that year. These awards covered a variety of scientific areas, mostly in basic cell and molecular biology or in areas related to drug discovery (Table 1).

Of the 105 grants, 61 listed specific plant species. As depicted in Table 2, the majority of NIGMS-funded plant research is conducted in *Arabidopsis thaliana*.

How do I know if my research could be suitable for NIGMS consideration?

As is evident from the data, NIGMS funds a small number of plant-related grants that propose to conduct research within our mission. Therefore, it is imperative to contact an NIGMS Program Officer (PO) to discuss whether your research could be suitable for submission to the Institute **before** starting to prepare an application. It would be unfortunate to spend time and effort preparing an application, only to have it withdrawn immediately for being out of mission.

You can find an appropriate PO to contact at https://nigms.nih.gov/about/Pages/contactbyarea.aspx. This page lists the scientific areas NIGMS funds and the relevant PO's name and email address. Send them a short description of your proposed research and ask for an assessment of potential fit to the NIGMS mission. If the first PO you contact is not the appropriate person, they typically will direct you to another PO. Note that even if the PO thinks the research you describe may fall within our mission, the final determination is only made when the full application is submitted.

Dr. Dorit Zuk is the Deputy Director of the National Institute of General Medical Sciences (NIGMS) at the National Institutes of Health (NIH). At the invitation of the ASPB Science Policy Committee, with which Dr. Zuk met in November 2024, she has contributed this guest feature article to describe the plant science research that is supported by NIGMS.

If my research is appropriate for NIGMS, what programs can I apply for?

All applications to NIH are submitted to a specific Notice of Funding Opportunity (NOFO). NIGMS participates in a number of research programs, including the two highlighted below.

Table 1. Top 10 Areas of Science Covered by Plant-Related NIGMS Grants in FY2023

RESEARCH AREA	# FUNDED
Natural Products Discovery and Analysis	11
Stem Cell Biology and Regeneration	8
Cell Death, Autophagy, and Homeostasis	7
Cellular Signaling in Growth	7
Chromosomal Organization and Mechanics	6
Cell Surface Receptors, Ligands, and Interactions	6
Developmental Genetics	6
Inflammation and Innate Immunity	6
Population Genetics and Evolution	5
Protein Folding and Degradation	4

You can also consult the "Which Grant Is Right for Me?" decision tree at https://www.nigms.nih.gov/Research/mechanisms/Pages/Research-Grant-Mechanism-Eligibility.aspx, which helps investigators conducting research within the NIGMS mission determine a potential fit to NIGMS research programs.

Maximizing Investigators' Research Award (MIRA) Program: Provides one grant per Principal Investigator (PI) to provide support for research that falls within the mission of NIGMS. These grants have no specific aims—the research can change direction as it progresses, provided it remains within the NIGMS mission. They typically are awarded for 5 years. Eligible PIs include Early-Stage Investigators (generally within 10 years of their terminal degree without prior NIH funding), New Investigators (those who have not previously competed successfully for substantial, independent funding from NIH), and Established Investigators who have a qualifying research grant from NIGMS. Additional information, including links to the NOFOs and extensive Frequently Asked Questions can be found on the NIGMS MIRA webpage (https://www.nigms.nih.gov/Research/mechanisms/MIRA/).

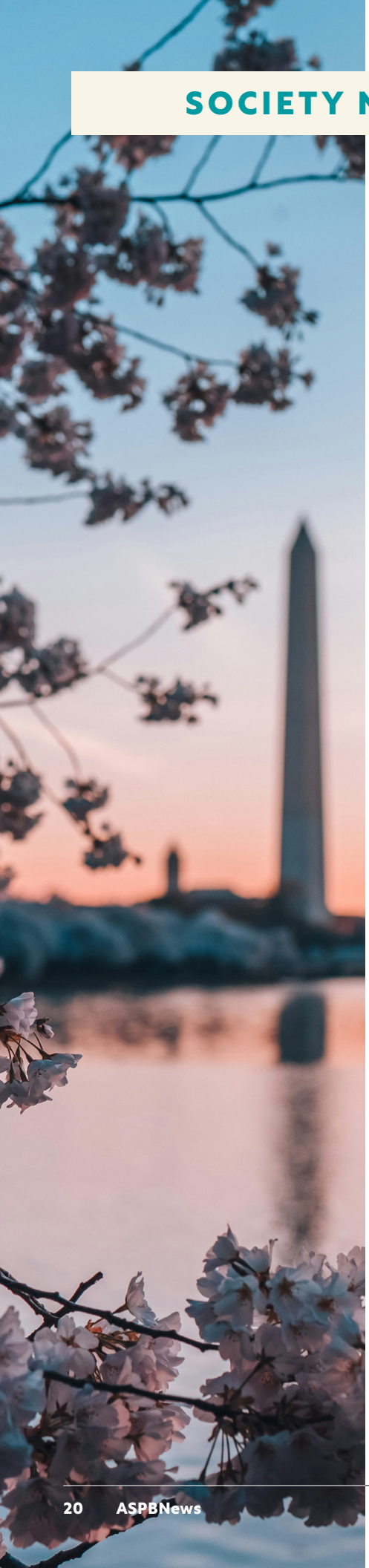
Support for Research Excellence (SuRE) Program: Supports research capacity building at eligible higher education institutions through funding investigator-initiated research in the biomedical, clinical, behavioral, and social sciences that falls in the NIH mission areas. Eligible institutions must award undergraduate (B.S. or B.A.) and/or graduate degrees in biomedical sciences; not have a lot of NIH funding; and enroll at least 25% of undergraduate students supported by Pell grants, or be a Historically Black College and University or a Tribal College or University.

This program includes two components: one for full-time, independent researchers who have not been a PI on any externally funded, peer-reviewed research grant; and the second for faculty investigators from eligible institutions who are not currently PIs of any NIH Research Project Grant. Additional information on the eligibility criteria and the relevant NOFOs can be found on the NIGMS SuRE webpage (https://www.nigms.nih.gov/about/overview/Pages/SuRE.aspx).

Note that these programs are described here in very general terms. You should consult the relevant NOFOs for specific information about eligibility and application requirements and reach out to a PO to discuss your interest before submitting an application.

Table 2. Research Organisms Studied in FY2023

ORGANISM TYPE (COMMON NAME)	# FUNDED
Arabidopsis **(mouse-ear cress)**	45
Artemisia annua **(wormwood)**	2
Mimulus **(monkeyflowers)**	2
Digitalis purpurea **(foxglove)**	2
Algae	2
Curcuma longa **(turmeric)**	1
Liverworts	1
Aronia melanocarpa **(chokeberry)**	1
Aconitum carmichaelii **(monkshood)**	1
Nicotiana tabacum **(tobacco)**	1
Ziziphus jujuba **(Chinese date tree)**	1
Zea mays **(maize)**	1
Physcomitrellum **(moss)**	1



The View from Here: The ECR Experience on ASPB's Science Policy Committee

BY JASMINE YU, PHD
2024 SCIENCE POLICY COMMITTEE EARLY CAREER REPRESENTATIVE

I was the Early Career Representative on the ASPB Science Policy Committee (SPC) from 2021 through 2023, and am currently a policy advisor at a DC-based non-profit focused on accelerating innovations for emissions reductions through bipartisan federal policy. I lead agriculture innovation and nature-based and hybrid carbon dioxide removal policy development. When I first joined ASPB's SPC, I was a fifth-year PhD candidate at Texas A&M researching the biochemical pathways of bioenergy sorghum stem development under different environmental conditions. The purpose of my research was to understand the mechanisms of biomass accumulation and potentially increase bioenergy yields from bioenergy sorghum. During this time, I realized I particularly enjoyed the science communication aspect of my PhD work and wanted to explore career opportunities that utilized science communication. When I saw that ASPB offered the opportunity to learn more about the federal policy space through an early career representative position on the SPC, I was immediately intrigued.

Over my two years with the SPC, I was exposed to a variety of federal science policy experiences, primarily through monthly meetings, when general updates on the progression of relative plant biology policies were shared and discussed. These meetings first exposed me to the type of jargon used in the federal policy space. The ASPB SPC also plays an important role in advocating for increased resources and support for plant biology research through meetings with leadership at federal agencies such as the Department of Energy and the Department of Agriculture. During these meetings, we receive updates on upcoming plans of the agencies, ask questions, and highlight the need for plant biology research. In addition to agency meetings, we also meet with Congressional offices and staffers to inform them about the exciting plant biology research being done in their states and advocate for specific policies that would further enhance plant biology research. We maintained contact with these Congressional offices on an ongoing basis and presented them with ASPB priorities. As an early career representative, I also had the opportunity to support the development of ASPB's Farm Bill priorities.

My favorite part of this unique experience was being surrounded by extremely well-informed and passionate members who were always open and willing to answer any questions I had about science policy. I felt very supported and included in all discussions throughout my time with this committee. I greatly enjoyed my time on the science policy committee, and it played a large role in my decision to pursue a career in science policy. I would highly recommend anyone who has considered policy work or is even just curious about another career path to join the science policy committee.

The Summer Undergraduate Research Fellowship (SURF) Endowment: A Call for Additional Support

BY JON MONROE

A few months ago, I sent a donation to ASPB to launch an endowed fund to support the Summer Undergraduate Research Fellowship (SURF) program. The impetus for creating this fund was a real concern that an economic downturn could threaten the very existence of this impactful program. Now, I need your help to make the fund grow so it can ensure SURF's future.

I spent my career at James Madison University in Virginia doing plant biology research with undergraduates. For me, it was necessary to involve undergraduates because JMU is a Primarily Undergraduate Institution (PUI); I didn't have PhD students, and postdocs are rare. For the students, it was their first opportunity to experience all aspects of doing research. Often, they became engrossed in the project and gained a real excitement about working with plants. Not all the students from my lab became plant biologists, but some of them did, including our recent ASPB president, Leeann Thornton.

In 2001, while serving ASPB as the Mid-Atlantic Section representative to the Executive Committee, I had the idea of using some of the Society's "Good Works" funds, derived from returns on the society's investment portfolio, to create a fellowship program to support undergraduates doing summer research. With the help of then ASPB Treasurer and fellow PUI faculty member Mark Brodl, we proposed the SURF program. The Society leadership embraced the idea, and after several years of using Good Works funds, the program moved into the annual ASPB operating budget, and it remains a highly popular program. Along with 2019 SURF recipient Clare Ravenburg, Mark and I worked hard to make sure the possibility of receiving an award was equitable across racial, gender, and PUI/R1 gradients, among other axes.

Since its founding over two decades ago, well over 300 students have received SURF awards, and many of them had life-affirming or life-changing experiences. The effects of receiving an award are best stated by the recipients:

Laura Wayne (2003 SURFer and former ASPB Council and Board of Directors member), *"The SURF program catalyzed my career in plant biology, and I know it has motivated others to pursue careers in plant science."*

Ian Wallace (2005 SURFer and current ASPB Secretary and Program Committee Chair), *"I was fortunate to be awarded an ASPB SURF award in 2005. This award supported research that led to a first-author publication in* Plant Physiology, *enabled me to attend my first Plant Biology meeting and give my first talk at a national meeting. It was an amazing experience that led to foundational relationships that have supported me for the rest of my career. Being a SURF awardee also encouraged me to attend many more Plant Biology meetings and even pursue my current position as ASPB Program Committee Chair. I have also encouraged my own mentees to pursue SURF applications, and I am proud to say that one undergraduate student in my lab has also been a past SURF awardee!"*

During the economic downturn of 2020, the Society's budget took a hit and some in leadership considered cutting the SURF program. Thankfully, others spoke up for its value and the program was not eliminated, although a portion of its funding shifted back to relying on a draw on investment earnings. That potential threat convinced me that the SURF program would surely benefit from having a more stable financial foundation, so I started to push for a SURF endowment.

How large would a SURF endowment need to be? Each SURF student currently costs the Society $7,275, including summer stipend (matching the NSF rate), supplies for the SURF mentor's lab, and registration/travel support to the following summer's Plant Biology conference. Each year the Society can only withdraw up to 3.5% from a restricted fund, meaning that endowing just one SURF fellowship would require over $200,000 of endowed funds. The more students we want to support, the larger the fund would need to be. Clearly, a fund to support a program of this size needs contributions from many of us.

Over the last year, my wife, Andrea Pesce, and I decided to start the endowment with a contribution of $50,000, the amount needed to start a permanently restricted ASPB fund. At this point it isn't enough to fund even one SURF student, but I promise to eventually send a larger donation to the SURF endowment as part of our will. I hope that won't happen anytime soon, so in the meantime, here's where I need your help. Any donation to the society earmarked for the SURF endowment will help it grow and support more undergraduate students. If you can also designate a portion of your assets to the endowment in your will, it will grow even faster. On behalf of the many future SURF students, thank you for your support!

Make Your Impact Donate to the SURF endowment to fund student research now and in the future!

Plant Science Comes Alive: Celebrating Public Engagement at Plant Biology 2025

BY DR. GAURAV RATURI

Plant Biology 2025, held in Milwaukee, Wisconsin, was more than just a high-level scientific meeting. It was a celebration of curiosity, education, and community outreach. This year's event featured a gathering of nearly 1,000 of top plant scientists, students, and teachers, where they not only discussed plant science but also celebrated through interactive outreach events designed to connect science with society. This conference is typically known for hosting cutting-edge research discussions on plant biology, genetics, molecular biology, physiology, pathology and other leading technologies. However, the conference dedicates time to allow researchers, students and science enthusiasts to engage around their love of plant science, transforming the host city into a knowledge sharing and educational hub for all ages.

Bringing Science to the Community

Ahead of Plant Biology 2025 there was a pre-meeting event: the Joanne Chory Memorial Symposium on Friday, July 25 and Saturday, July 26. The key feature of this event was the 28 scientific presentations by the researchers trained by Dr. Chory, covering recent developments in light and temperature signaling, organelle signaling and dynamics, auxin and shade avoidance, brassinosteroid and receptor kinase signaling, and harnessing plants for innovation. In addition, this symposium also included a special session, dedicated to Dr. Chory's friends and collaborators, who shared their memories and tributes, highlighted her remarkable life and her scientific legacy. This symposium attracted students, educators, researchers, and other community members eager to learn about plant research and its impact. This event ran parallel to Plant Science Saturday, hosted at South Shore Farmers' Market on July 26, 2025, which felt like a plant science festival filled with meaningful conversation, curiosity, and excitement.

Empowering Young Scientists and Educators

Later that morning, faculty and educators were also supported through the PUI Faculty Professional Development Workshop, "Work Smarter Not Harder -Time Mastery Techniques to Maximize Your Plant Science Research Productivity." This workshop offered a practical illustration of ASPB's commitment

to empower faculty and educators to balance research and teaching equipping them with tools to maximize their outcome.

By mid-morning the hall started buzzing with the students' energy as they started pinning up their posters on their dedicated spots. The Undergraduate Networking & Poster Session provided a crucial platform for students to share their research stories in a welcoming and interactive environment. There was a wide range of topics from stress tolerance to molecular biology, multi- omics, molecular biology, crop improvement, microbial interactions, and advance technological research including single cell transcriptomics. Some of the students were nervous at first, but then gained rhythm, and spoke about their research. Fellow students and mentors joined them, listened, asked questions, and offered suggestions. The excitement continued in the Grand

Ballroom with the Opening Address, 2025 Awards Presentations, and Presidential Plenary. Finally, the day wrapped up with the welcome reception, where guests enjoyed refreshments, mingled with others, shared the day's highlights, and relaxed in a festive atmosphere.

Workshops and Meet-ups for Broader Engagement

Throughout Sunday and Monday, ASPB scheduled a range of workshops, learning sessions, and networking events that filled the day with inspiration from early morning to late evening. Sunday morning started strong with the Biomechanics plenary session. Later, attendees had opportunities to share insights and strategies for communicating plant science more broadly at social media meet-ups and get practical tips for securing funding at the "How to Write a Successful BLOOME Proposal" session. The afternoon was packed with different concurrent sessions covering a broad range of topics including the role of chromatin regulation in plant adaption to environmental changes, specialized metabolites, modern tools in soybean, spatial cell biology and vegetative and reproductive development. Later that afternoon, the concurrent sessions continued with topics such as High Throughput Computational Approaches, Plant Inter-Kingdom Interactions, Plant Genetics, Mineral Stress, and Plant Acclimation to Environmental Stressors. The day wrapped up with an engaging poster session and refreshments, trivia night and LGBTQ+ networking social and other informal events breaking down barriers between students, postdocs, and faculty.

Monday was anchored by the Marc Cohn Seed Biology Plenary, an inspiring deep dive into seed biology. Later in the morning, the workshops like "Dipping Your Toes into Industry" and "Seeds of Change: Celebrating Young Innovators" introduced students and researchers to the tools to connect science with the real world. That afternoon brought a strong lineup of concurrent sessions covering plant-microbe partnerships, the JSPP-ASPB joint symposium and stress physiology, epigenomes and diversity in the plant world.

Tuesday started with a cutting-edge plenary on Single-Cell Transcription and Spatial Biology in Agriculture. It showcased how single cells and spatial biology are reshaping plant biology. The plenary session was followed by multiple workshops, including "Artificial Intelligence in Molecular Plant Sciences" and "From Seed to Tree: Policy and the Emerging Bioeconomy." The afternoon concurrent sessions covered topics like computational biology, signal transduction, and phenomics and the future of plant research. The evening wrapped up with the always-anticipated annual party, a celebration of science that gave attendees a chance to celebrate and connect with fellow researchers.

A Platform to Shine: My Experience at the Future Plant Scientists Poster Session

One of the most inspiring moments came from the "Future Plant Scientists Poster Session," where researchers presented their research projects. Posters highlighted a wide spectrum of work and provided platforms for researchers to share their ideas and get feedback. I presented my own research during this session, and felt confident standing by my poster and discussing my work. It was a great experience, which allowed me to connect with mentors and exchange insights.

Final Day: Microbial Interaction with Plants and Closing Inspiration

The last day of the conference was no less inspiring. The day started with a plenary on molecular exchange between plants and their interacting microbes. This closing session maintained the spirit of the meeting, gave fundamental insight into the challenges plants face in a changing world and how the interaction of plants and microorganisms sustain symbiosis, defenses, and the nutrient cycle.

Final Thoughts

Plant Biology 2025 was more than a professional gathering—it was a celebration of plant science between researchers and the communities affected by their work. It showed that plant science extends far beyond the labs and classrooms. By blending public engagement with science, the conference welcomed a diverse audience. Participants got a chance to meet plant biologists from academia, industry and policy making. Throughout the week, from plenaries to poster sessions, workshops to social events, and seeds to single cells, Plant Biology 2025 was a reminder that plant science will continue to evolve. The success of the event is a testament to the cumulative efforts of ASPB members, organizers and plant scientists who played important roles in shaping the future of plant science.

Plant Biology

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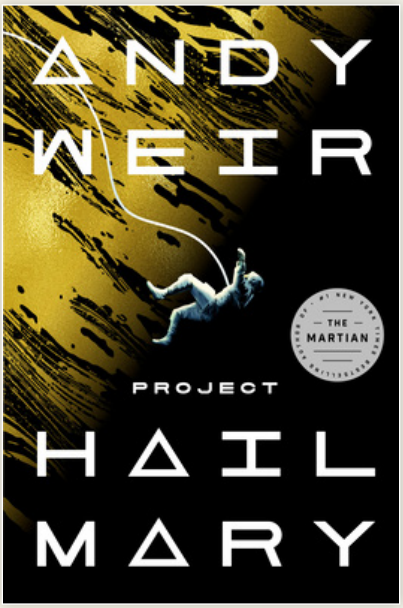
Happening on Plantae

A Biologist's Perspective on *Project Hail Mary* by Andy Weir

BY PAULINA RAMIRZ MIRANDA



In this sci-fi adventure, we follow the story of Ryland Grace, who one day wakes up with amnesia in the middle of space. At first, he can't even remember his name, but as he recovers his memories, we start to unravel his story and his current situation. Soon, he realizes the gravity of the mission ahead and the challenges of it.

The story feels well-built, and the intertwining of realistic elements with the fictional ones was cleverly done, allowing me to roll with whatever the author came up with. The pace in the "present" is slow at first, but soon it picks up speed. I think the book achieves a great balance between telling both timelines and keeping you hooked. And, as the pieces start to fall into place, it is impossible not to be captivated by questions: what happened? In which dire situation is the Earth right now? And how on earth did Ryland, a former school teacher, end up involved in this mission? Well, it probably has something to do with the fact that he has a molecular biology background. So, as a person with a similar background, I decided to write a review about it and check what feels realistic for those who might be interested in this.

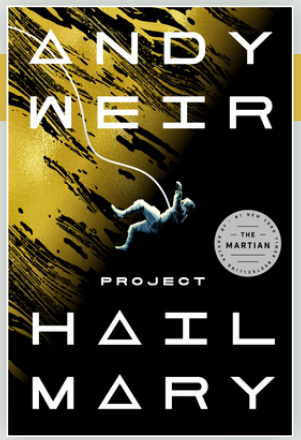
Previously, I heard some people say that the book felt like a logbook, which made me reluctant to start the book. I found that, although you have some paragraphs where he gets a bit technical, it feels approachable to everyone and it doesn't get in the way of the narrative. On top of that, I feel like it captures the spirit of the scientific method. What do I mean by this? If you're not so familiar, the scientific method is nothing more than the structural process of getting answers. People ask questions, then think about what the answer might be, and plan experiments to test it. At the end, you examine the results of said experiments and draw conclusions. That's how science works in a nutshell. Even if the description of the experiment setups isn't perfect, the way Ryland goes from one experiment to another is, in a way, what research feels like. Let's look at a few scientific aspects of the story.

Beware, from this point on, you will find **spoilers ahead**.

A Biologist's Perspective on *Project Hail Mary*

BY PAULINA RAMIRZ MIRANDA

Note: This article contains **spoilers**.



***Project Hail Mary* by Andy Weir**

One of the things I often wondered was: "How on Earth does he know all this?". From 'physics theories' that I was able to pass by since he was a "science" teacher without any specialty, to the unbelievable fact that he would have memorized numbers that are physical constants. Even with all his training, I find it hard to believe he would recall such detailed knowledge from things outside his field.

Moving on, we have to discuss the astrophages and our beloved Rocky. We'll start with the assumption that life outside of Earth is possible. I didn't know that aliens were involved in this story, so I was glad that the first thing they introduced, so close to Earth, were the astrophages. That way, the later introduction to Rocky didn't feel like a stretch. Regarding the astrophages, I wonder how they travelled through space, given that they need something to propel them from one solar system to another. I set this question aside, since space physics isn't my area of expertise.

A bigger question for me was their lack of oxygen use (or any alternative element), astrophages just exist in space and apparently don't need any atmosphere, even Rocky was reliant on it and had to adjust his atmosphere to coexist on his side of the ship later in the book. Another striking detail is their optimal temperature. In the book, they mention a temperature of around 96°C. They later discovered that these life forms are not so different from bacteria or single-cell organisms from Earth; they even have internal organelles, like mitochondria. The issue is that all of these organelles rely on proteins and genomic DNA, which can be denatured (AKA: making them unviable) at such high temperatures. We know of bacteria that thrive in high temperatures called thermophiles, which evolved to protect all these heat-sensitive elements. And, although 96°C sounds extreme, we have papers describing a member from archaea known as *Methanopyrus kandleri*, which lives in temperatures between 80°-100°C, which clearly adapted its proteins and protected its genomic material to live in these conditions (Check Sebaihia, 2002).

But the most fascinating fact about astrophages is their capacity to store gigantic amounts of energy. You probably recall from your high school classes something along the lines of "Energy is not created or destroyed", meaning that all the energy has to go somewhere. The book mentions that astrophages store them internally... but I am sceptical that an organism could achieve this; nevertheless, it is the main plot device to explain the dying sun, and I can live with it. I appreciate that they somehow acknowledge this physical property making the astrophages the perfect fuel for the *Hail Mary*. All things considered, I liked the management of the astrophages throughout the book.

Last but not least, the evolution of Taumoeba. After a long journey, they find the predators of astrophages, the perfect solution for their dying sun... except that, for the plan to work, the Taumoeba needs to tolerate nitrogen. The book mentions how they grow Taumoeba with small quantities of nitrogen, gradually increasing and selecting the farms that improved their resistance. This struck me as plausible, since natural selection is something humans actively take advantage of; we can easily exemplify it by taking crops, which were selected to have the characteristics that we want. We can even demonstrate this trait by talking about antibiotic resistance, where it has been observed that infecting bacteria have acquired resistance to some of the most used antibiotics. If they can evolve to resist antibiotics, then astrophages can adapt to nitrogen.

There's a lot more we can discuss about the science behind the novel. However, I think most of the realistic aspects are skillfully incorporated to serve the plot and support the made-up elements, making the world that Weir presents to us convincing. *Project Hail Mary* is a captivating, amusing, occasionally sentimental, and well-researched science fiction novel perfect for everyone. The futuristic and fictional world that Weir creates provides the readers with no science background a new perspective on science, and it manages to share the enthusiasm for it through the passion of Ryland. I thoroughly enjoyed this book, and now I am eager to read more works from the same author.

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