

PRESIDENTIAL UPDATE

Proactively Addressing Needs and Initiating New Activities for APS

Kira Bowen, APS President, bowenkl@auburn.edu



My presidential term began at the end of the International Congress of Plant Pathology (ICPP) in August 2018. As host of this congress, APS took center stage in the world of plant pathology. This was a

great experience for everyone who attended. We met old friends, made many new friends, and heard numerous interesting talks from colleagues across the globe. International engagement has continued through these months with a new memorandum of understanding (MOU) with the Canadian Phytopathological Society and steps toward development of webinars done jointly with APS and the Indian Society of Plant Pathology.

Now, just a few months into the year, we are looking forward to Plant Health 2019! This is our inaugural use of the brand “Plant Health” for the APS Annual Meeting. This brand, meant to underscore work done by plant pathologists and allow public recognition of what we do, was adopted after much discussion and debate. The idea for rebranding our meeting came through recommendations from Velvet Chainsaw Consultants (VCC). VCC attended our meeting in 2016 in Tampa and made a number of suggestions for improving our annual gathering. Their suggestions included allowing more time for

“APS Council has been thinking about the next 10 to 15 years and how to proactively address changes that might impact our society.”

networking between sessions and downsizing the poster viewing area. Both of these suggestions were implemented at ICPP2018 in Boston. At Plant Health 2019, additional enhancements will be put into place, including the use of electronic posters.

By the time this issue of *Phytopathology News* is available, APS will have a redesigned website. The new design will bring a fresh look to APS webpages and improved organization of content.

You also may have started to notice some major changes underway for Plant Management Network (PMN). *Plant Health Progress* has become part of the APS suite of journals. *Plant Disease Management Reports (PDMR)* will become another APS subscription-based product, and there is ongoing discussion about how to modernize and possibly expand the content associated with these reports. PMN will remain a separate entity with robust content aimed at practitioners, including the “Focus on” series as its main content component.

Another ongoing effort in APS has been addressing consistent engagement with plant pathologists throughout their careers and

regardless of their affiliations. A “Community Connector” membership is a low-price category that allows new members to explore APS through access to *Phytopathology News*, live webinars, and the biweekly APS Email Digest. The 2026 Professional Development Forum (2026 PDF), led by **Renee Rioux**, is exploring new ways to increase member engagement through social media and online communities. The 2026 PDF is also organizing a focus group to understand the needs and motivations of midcareer professionals and how APS can support them.

The Public Policy Board, chaired by **Gwyn Beattie**, has also been busy. APS members were polled about their priorities to provide feedback to the U.S. National Institute of Food and Agriculture during its listening sessions. Members’ priorities included but were not limited to promoting forest health and predicting the emergence and reemergence of pathogens. This latter priority was also recognized by the Plant Pathology Advisory Taskforce in 2017, and APS Council is currently working on the first

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APS Launches Redesigned Website

This month, APS launched its updated website. The new site is easier to navigate, is mobile-friendly, and has many other exciting features. Every aspect of the website translates across your desktop, tablet, and smartphone. Explore the [new homepage](#), [member area](#), [Education Center](#), [journals site](#), and more! We hope you enjoy the new site! ■

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PLANT PATHOLOGY'S PERPLEXING PAST—THE REST OF THE STORY

William Orton Begins Breeding for Disease Resistance

Robert M. Harveson, University of Nebraska, rharveson2@unl.edu

Last month, I told you the story of E. F. Smith and his nascent studies with *Fusarium* wilt diseases of watermelon, cowpea, and cotton. His work in the early 1890s brought to light the serious threat that this group of diseases posed to production of these crops. After completing his preliminary investigations into *Fusarium* wilt, Smith hired a 22-year-old New Englander fresh out of college, William A. Orton, and assigned to him the task of developing control measures for the “*Fusarium* problem.” This prescient decision opened the door to the concept of genetic resistance as a means of combating the wilt diseases, and Orton’s brilliant research in this area is the rest of the story.

Plant Breeding for Disease Resistance

In the late-nineteenth century, wilt disease of cotton severely threatened the economic stability of the southern United States, because cotton was this region’s most valuable commodity. Smith thought it was the most serious problem at the time, so ironically, he had Orton begin with this disease in 1899 despite the fact that the young man had never seen a cotton plant.

Orton hypothesized that disease resistance would be among the most promising management strategies, after initial failures with chemical seed treatments and soil treatments of lime and fertilizers. He made selections from desirable plants that survived to harvest on *Fusarium*-infested soils, and he obtained additional seeds from other cotton growers, who also had been collecting plant selections from wilt-diseased fields since 1895.

Orton observed that progeny plants from the preserved seeds thrived the following season whereas the plants surrounding them wilted and died, thereby demonstrating that selection for resistant plants was a practical possibility and that resistance was a heritable characteristic. He began a formal breeding program for resistance to cotton wilt in 1900 using this process of selection and testing of resulting filial generations on heavily infested land, and he was successful in developing several new highly disease resistant cultivars of upland cotton, including “Rivers” and “Centerville.” Both of these introductions grew well in locations in which the susceptible types had previously failed, and both became parents for later wilt-resistant cultivars. Within 2 years, Orton had solved the problem that Smith claimed in 1898 was among the most serious in plant pathology, and he also saved the most important commodity in the South.

Cowpea and Watermelon Wilts

Next, Orton investigated wilt disease of cowpea but with a different approach. In this case, he tested different cultivars on so-called pea-sick soils (soils heavily infested with the pea pathogen) for 2 years. Using this method, he identified a natural resistance to wilt from an existing cultivar called “Iron.” More importantly, he noted that this resistance to wilt was accompanied by a strong resistance to the root-knot nematode, providing the first example of the development of multiple disease resistance in crops. This synergistic relationship with the two root pathogens had been noted by George F. Atkinson in Alabama a decade earlier with the nematode and the cotton wilt pathogen.

For wilt disease of watermelon, Orton began by testing all the available cultivars, as he did with the cowpea studies, but found none that were resistant. He then employed another technique: the use of exotic germplasm through hybridization. This method eventually resulted in creation of the first wilt-resistant cultivar, “Conqueror,” which was produced by crossing the highly resistant African citron melon (*Citrullus lanatus*) with the susceptible watermelon cultivar “Eden.”

Selections made from “Conqueror” progeny maintained the desired watermelon horticultural traits along with disease resistance after being exposed to conditions of heavy infestation, thus solving the problem. “Conqueror” was not widely used commercially, but over the years, it has been used as a parent. Using this original cultivar, numerous watermelon breeding programs have successfully produced wilt-resistant cultivars.

Orton’s Influence on Modern Breeding

Orton’s investigations into *Fusarium* wilt are considered landmark studies in plant pathology. Although all of his methods utilized the concept of crop resistance, he addressed and solved

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phase of an Emerging Pathogens Initiative. A working group for this initiative, chaired by **Nik Grunwald**, has been established and includes members with a range of disciplinary expertise and backgrounds. The basic mission of this initiative is to build connections and infrastructure to identify, monitor, and manage emerging pathogens. Anyone interested in contributing ideas should contact Nik. The working group is planning to develop a white paper and frame the details of the initiative during an upcoming 1-day workshop.

The Office of Education (OE), chaired by **Tom Mitchell**, is considering how to better address the educational needs of international members. To launch this effort, I will start a dialogue with members of the Caribbean Division at their meeting in May. In addition, the OE Undergraduate Task Force is making plans for undergraduates who may attend Plant Health 2019 in Cleveland; this task force, chaired by **Lydia Tymon**, is also working on an undergraduate website to provide meaningful connections between undergraduates and scientists.

APS Council has been thinking about the next 10 to 15 years and how to proactively address changes that might impact our society. For example, open-access journals are changing the dynamic and may become the major venue for research publication as dictated by select funding agencies. We will be carefully considering options for APS and its members.

So much is going on in APS! I am honored to serve as president and to give back to this society that has meant so very much to me. Throughout my career, people that I have come to know through APS have filled gaps in my professional life, have helped my professional growth, and have inspired me in many ways. A big thank you to everyone! ■

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each problem using a different approach (selection and progeny testing, screening existing cultivars, and hybridization with exotic germplasm). More importantly, Orton's work provided the first practical use of breeding for disease resistance and demonstrated that disease resistance is transmitted as an inherited trait. *And now, you know the rest of the story!*

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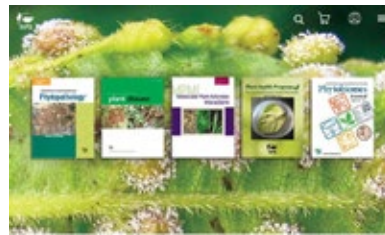
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Featured Member Benefit

APS News Capsule

The *APS News Capsule* digests and distills the latest updates in the field of plant pathology and delivers them to your inbox twice each month. And now, you can find these member-only updates in a brand-new layout! Watch your email every first and third Thursday, or [view the latest news capsule online](#). ■

Upgraded APS Journals Site Enhances Research Visibility



In 2016, APS Council approved funding for a major upgrade of the APS journals site. The result is the new APS Publications site, which went live on March 11, 2019. APS will continue to fine-tune the site in the coming months, and we invite authors and readers to explore it as we continue our work. All the content has been transferred to the

new site, which has been updated with the newest publishing technology and operates on a top-tier platform used by many of the leading academic publishers.

The sleek, user-friendly design of the updated site makes it easier than ever to access and read content. Articles are clearly presented and have in-line figures and tables, and adjacent sidebars include metrics data, literature-cited links, and article citation notes. The scalable design means content looks great on all screens. New eReader functionality delivers a better reader experience for online books, which can be downloaded or added to an offline library. The eReader also includes convenient features such as a citation exportation tool, search capabilities, and display customization.

The editors-in-chief of APS journals and the APS Publications Board chair worked closely with APS publishing staff to develop the site. APS is committed to supporting our researchers and making their content more discoverable, and our new publications site was developed with these goals in mind. The new site offers increased visibility, as it is Google indexable and adheres to Google Scholar best practices; in addition, most of the APS journals are directly indexed by Web of Science, PubMed Central, SCOPUS, and other important indexing services. Improved search functionality, including keyword mapping, enhances discoverability, and trending research for each journal is presented and will be updated regularly on the journal's homepage and at the homepage for the site.

We are excited to deliver a platform that delivers the features and functionality that authors and readers want. ■

Register Now for Plant Health 2019



Registration is open for Plant Health 2019 in Cleveland, Ohio! For this year's annual meeting, we're planning a number of design improvements to the exhibit hall and the APS PRESS bookstore. We're also excited to announce that the celebration night will be hosted at the Rock and Roll Hall of Fame.

Reunite with your colleagues and connect with new faces in the plant pathology community. Register today at the advance rate. ■

Impacts of the Government Shutdown on the APS Community

by Gail Tomimatsu and Morgan Carter



Late Friday, January 25, 2019, the twenty-first shutdown of the U.S. government was declared over.

More than 800,000 furloughed civil servants were asked to report back to work on Monday, January 28. For 35 days, civil servants did not receive their paychecks, and for many federal agencies, a skeleton crew of “essential” staff was asked to keep critical and necessary functions operating without getting paid. “Mission-oriented” employees and contractors, such as those involved in agriculture, the environment, and geophysical sciences, suddenly found themselves locked out of laboratories and barred from using federally funded resources and equipment.

In addition to the financial hardship and potential demoralization incurred by furloughed federal workers, many of those in the APS community were impacted by this government shutdown in other ways.

Decisions on federal grants and fellowships were delayed. These delays resulted in postponed start dates for new awards and changes in project plans. Given the critical importance of fellowships and grants in supporting young scientists, delays in award notifications of trainee programs (such as the NSF Graduate Research Fellowship Program and the USDA Education and Workforce Development Program) may have altered student and post-doctoral plans, and direct hardships were incurred by some NSF trainees who could not access fellowship stipends. New deadlines have been announced for some USDA and NSF programs, although these programs were not among those used by many in the APS community.

Progress on agricultural research was delayed. Furloughed employees in USDA laboratories were instructed to halt their research altogether. Many academic scientists also experienced research delays and hurdles because they were unable to access USDA facilities or resources critical to their research; these effects were particularly noticeable on many academic campuses that have fully integrated USDA laboratories. Agricultural scientists requiring action on regulatory permits, such as authorization by the Animal and Plant Health Inspection Service (APHIS), also experienced barriers to sharing resources because of delays in processing permit applications.

The shutdown also incurred a social cost, namely, potentially discouraging scientists from pursuing positions in public service. The federal government shutdown, the longest in history, illustrated some of the risks of public service. It highlighted the potential for lost time, lost research (e.g., experiments irreparably interrupted), and lost opportunities (e.g., being unable to present at conferences such as the 2019 Plant and Animal Genome Conference held in January 2019), possibly causing young scientists to question a career path in federal service.

But the research community is robust. Disruptions to research progress can take

many forms, including natural disasters. This latest disruption is a good reminder to do what we can to help others when bumps (or calamities) arise in our paths. APS commends the departments and scientists who opened their lab spaces, found temporary funding options, and helped to keep community members going. The shutdown was also a reminder that, as a forward-thinking community, we should consider what policies or plans we might implement to avoid, minimize, or mitigate the damaging effects of such disruptions in the future. ■

Farm Bill Impacts NIFA’s Specialty Crop Research Initiative Program

Recent changes in the newly enacted farm bill have impacted the USDA National Institute of Food and Agriculture (NIFA) Specialty Crop Research Initiative (SCRI) awards. NIFA is currently assessing the potential impacts on existing and new awards.

The following changes in the farm bill would affect this program:

- An increase in indirect costs from 22% to 30% (with the total amount of indirect costs, including subcontracts, limited to 30%)
- Reinstatement of a requirement from the 2008 farm bill for matching funds from nonfederal sources
- Expanded eligibility to include the following:
 - Emerging and invasive species
 - A more effective understanding and utilization of existing natural enemy complexes
 - Achieving a better understanding of the soil rhizosphere microbiome, pesticide application systems and certified drift-reduction technologies, and systems to improve and extend the storage life of specialty crops
 - Decision-support systems driven by phenology and environmental factors, improved monitoring systems for agricultural pests, and effective systems for preharvest and postharvest management of quarantine pests.

With regard to designating funds to specific specialty crops (called “set-asides”), the Joint Explanatory Statement accompanying the conference report stated that the “funding for research programs for specialty crops should generally be made available to all specialty crops and not include carve-outs or set-asides for any one particular specialty crop.”

However, in light of “the unique challenges presently facing the citrus industry in the United States with respect to HLB and the Asian Citrus Psyllid vector,... the Managers have agreed to establish a Citrus Trust Fund to support the Emergency Citrus Disease Research and Extension Program for one additional five-year period.” This program is not intended to continue in perpetuity. Moreover, given the “concerns that prioritizing grants that are multi-state, multi-institutional, or multi-disciplinary disproportionately impacts the funding success of projects for certain commodities grown only in one state,... the Managers encourage the Secretary to take appropriate steps to ensure that meritorious proposals are not denied solely because they lack one of the enumerated priorities.”

The total amount of funding will be \$800 million over 10 years. Whereas these changes will need to be incorporated into the new request for applications (RFA), the farm bill applies to the current year (FY 2019). Thus, NIFA is currently evaluating the changes that can be reasonably implemented under the current RFA. ■

Applications for Storkan-Hanes-McCaslin Foundation Awards Due May 1

The deadline is approaching for graduate students to submit applications for the Storkan-Hanes-McCaslin Foundation Awards, named in honor of Richard C. Storkan, Gerald L. Hanes, and Robert L. McCaslin. To date, \$534,500 has been awarded to 84 promising scientists. In addition to unrestricted cash awards (which range from \$5,000 to \$10,000 and can be used for any purpose that will benefit the education of the student including personal expenses), new awardees will also receive round-trip fare to Plant Health 2019, the APS Annual Meeting, in Cleveland, Ohio,

and be presented their awards at a luncheon attended by their research advisors, previous awardees, and members of the APS Foundation Committee. A major aim of the foundation is to encourage research by offering financial assistance to graduate students working on soilborne diseases of plants.

To be considered for funding, the applicant's proposal should be carefully prepared in accordance with the instructions published in the December 2018 issue of *Phytopathology News* and submitted electronically no later than **May 1, 2019**, to [Michael Stanghellini](#) (chair

of the Selection Committee). The applicant should submit a single file that contains the following: (1) a two- or three-page research proposal, including a concise statement of the objectives, methods, and materials and the projected impact of the proposed research (a budget is not required); (2) a one-page resume (including a brief education and research background, plus a telephone number and email address); and (3) a letter of recommendation from the applicant's major professor or research director. ■

Meetings

Plan to Get Inspired by POD Talks at Plant Health 2019!

Conversations with Phytopathologists of Distinction (PODs) offer meeting attendees at all career stages opportunities to connect with notable phytopathologists in informal settings as they discuss their individual career journeys. This year's POD talk speakers bring fresh, exciting perspectives that you won't want to miss. Plus, time for discussion is built in after each talk!

Meet this year's PODs:



Anne Alvarez, Department of Plant and Environmental Protection Sciences, University of Hawaii, Honolulu: "Adventures in Science"



Tom Harrington, Department of Plant Pathology and Microbiology, Iowa State University, Ames: "Twists and Turns Down a Forest Path"



Mary Hausbeck, Plant Pathology Department, Michigan State University, East Lansing: "A Team Approach to Solving Disease Problems for Growers"



Sally Miller, College of Food, Agricultural, and Environmental Sciences, Department of Plant Pathology, The Ohio State University, Wooster: "Plant Health at Home and Abroad: Science + Outreach = Making a Difference" ■

APS Membership Matters

SASHA MITREV

Global Resources and Connections



Mitrev is a full professor at the Faculty of Agriculture, Goce Delcev University in Shtip, North Macedonia. He obtained a master's degree at the Faculty of Agriculture at the University of Novi Sad in 1993 and finished his doctoral studies at the Faculty of Agriculture in Skopje in 1998. His scientific research focuses are phytopathology and bacteriology. He has authored or co-authored more than 200 publications.

As a plant pathologist based in Macedonia, what prompted you to become a member of The American Phytopathological Society?

More than 22 years have passed since we were introduced to the opportunities that the Internet has brought about and since I came to your website, which looked very helpful for my phytopathology career. Since then, I have become a member of APS, and I have been continually subscribed to this day. To prepare a rich scientific career in the field of plant protection, you have to study life sciences, which involves learning about living organisms and includes subjects like biology, biochemistry, microbiology, and ecology. Learning about all these topics will be much easier if you are member of The American Phytopathological Society, which, from my point of view, helps us to find solutions for most of the problems in which we are involved during phytopathology work. APS helps us in our teaching work as academic professors and in our field work in agricultural and food safety for good agriculture practice.

What is the most valuable benefit of APS membership?

APS membership helps me, as well as my colleagues from the Department for Plant and Environmental Protection, to be informed about all the news that happens in the field of plant protection from a scientific point of view and to connect with colleagues all over the world who work on the same topic. Plant pathology is an interdisciplinary science that includes knowledge of botany, microbiology, crop science, soil science, ecology, genetics, biochemistry, molecular biology, and physiology. APS also helps us in teaching bachelor's students, master's students, and doctoral students by providing educational resources.

How has your APS membership supported and enriched your work in the plant pathology field?

By using *Laboratory Exercises in Plant Pathology* from APS and other materials in plant pathology, we implement most methods of work in our laboratory and have successful experiments in the conditions of work. Our UNILAB works as an accredited laboratory, and the APS *Diagnostic Assay Validation Terminology* has helped us.

What are the benefits of an APS membership for plant pathologists in Macedonia and beyond?

APS has a very rich website and publications store. We started to use the site more than 20 years ago, and we recommended that all our colleagues become members. Most of our colleagues use the APS website as a very powerful tool for plant pathology work. ■

Degrees



Cristian Olaya recently completed the requirements for a PhD degree in plant pathology at Washington State University (WSU). His major advisor was **Hanu Pappu**, and his committee members

were **Amit Dhingra**, **Patricia Okubara**, **Kiwamu Tanaka**, and **Ana Whitfield**.

Olaya's dissertation was titled "Biological and molecular investigations into tospovirus-host interactions." Olaya received a BS degree in agricultural engineering from the University of Caldas in 2002 and an MS degree in agricultural sciences with emphasis on crop protection from National University of Colombia, Palmira campus, in 2014. Prior to joining WSU, Olaya worked as a research assistant in the virology research unit at the International Center for Tropical Agriculture (CIAT) on diagnosis and characterization of viruses affecting crops such as bean, cassava, rice, tomato, oil palm, and tropical fruits in Palmira, Colombia. At WSU, Olaya served as vice-president and co-founder of the Latin American and Iberian Graduate Student Organization, vice-president of the Plant Pathology Graduate Student Organization, Plant Pathology Graduate Student Senator in the Graduate and Professional Student Association (GPSA) Senate, and a member of the organizing committee for the WSU Plant Science Symposium: Pioneering Ideas in Agriculture. He has received numerous awards, scholarships, and recognitions, including the APS Foundation Kyung Soo Kim Student Travel Award and the Alaska Airlines Travel Award to attend ICPP2018 in Boston and the 3MT Thesis Competition's People Choice Award. Cristian plans to work as a scientist in applied plant virology.

The Plant Pathology Graduate Program at The Ohio State University graduated 11 PhD students, three MS students, and four Master in Plant Health Management students, which is the largest group of graduates by this program in a given year. Names of graduates, along with brief descriptions of their research topics and faculty advisors, are as follows:

PhD graduates: **Ferdous-e Elahi** (Identification of the causal agents of bacterial soft rot of potato in the U.S. and Bangladesh, advisor Sally Miller); **Mynul Islam** (*Sclerotinia sclerotiorum* in *Brassica* spp. in Bangladesh, advisor Miller); **Anna K. Stasko** (Functional gene analysis of resistance QTL towards *Phytophthora sojae* on Soybean



Left to right: Claudio Vrisman, Sally Miller, Francesca Hand, Rachel Capouya, and Shan Lin.



Left to right: Amilcar Vargas Loyo, Anna Detoro, Kelsey Scott, Cassidy Gedling, Anna K. Stasko, and Anne Dorrance.



Left to right: Pengfai Bai, Guo-Liang Wang, Pavinee Suttiviriya, and Dominique N. Tate.



(Inset) Left to right: Jonell Winger and Helen Andrews.

Chromosome 19, advisor Anne Dorrance); **Loic Deblais** (Salmonella in fresh tomatoes, characterization and novel approaches to management, advisor Miller); **Pavinee Suttiviriya** (Pi9- and Piz-t-Agrassociated Proteins in resistance to *Magnaporthe oryzae*, advisor **Guo-Liang Wang**); **Pengfai Bai** (rice innate immunity, advisor Wang); **Dominique N. Tate** (*Magnaporthe oryzae*-rice molecular interactions, educational assessment in plant pathology laboratories, advisor **Thomas K. Mitchell**); **Cassidy Gedling** (mechanisms of resistance and candidate gene analysis towards *Fusarium graminearum* and *Phytophthora sojae* in soybean, advisor Dorrance); **Claudio Vrisman** (characterization and novel management approaches for *Erwinia tracheiphila* in cucurbits, advisor Miller); **Rachel Capouya** (analysis of microbial communities in three diverse commodity systems, advisor Mitchell), and **Shan Lin** (fruit rot of deciduous holly in U.S. nursery

production, advisor Francesca Hand).

MS graduates: **Amilcar Vargas Loyo** (Phytophthora management in soybean, advisor Dorrance); **Kelsey Scott** (mapping resistance to Pythium; advisor Dorrance); and **Andres Sanabria** (effects of anerobic soil disinfestation combined with biological control of root knot nematode and lettuce drop, advisor Miller).

Master in Plant Health Management graduates: **Anna Detoro** (training and education on ornamental trees and shrubs for health care professionals, advisors Dorrance and **Anand Persad**); **Helen Andrews** (pesticide safety and education, advisors **Mary Rose** and Dorrance), **Kodi Riedel** (urban forest evaluation, advisors **Luis Canas**, Dorrance, and **Pierluigi Bonello**); and **Jonell Winger** (factors affecting soybean cyst nematode and sudden death syndrome in Ohio, advisor Dorrance).

In Memory



Dr. Rama Shanker Singh, Dean Emeritus of Post-Graduate Studies at G. B. Pant University of Agriculture and Technology (GBPUAT), passed away at his home in Kichha, Uttarakhand, India, on

January 7, 2019. Dr. Singh was born at his maternal grandparents' home on January 1, 1927, in Nakail village, Deoria district (Uttar Pradesh), the eldest of nine children of Jaiguru Singh and Devkali Devi. Dr. Singh received his BSc Ag (1946), MSc Ag (1948), and PhD in plant pathology (1955) from Government Agriculture College (now C. S. Azad University of Agriculture and Technology), Kanpur (Uttar Pradesh).

From 1948 to 1951, Dr. Singh worked as a research associate and from 1951 to 1956 as a lecturer in the Department of Plant Pathology, Government Agriculture College, at Kanpur. He was assistant professor of plant pathology at Ranchi Agriculture College (Bihar) from 1956 to 1962 and then at Bihar Agriculture College, Sabour, during 1962–1963. In 1963, Dr. Singh joined GBPUAT (then U. P. Agriculture University), Pantnagar, as assistant professor of plant pathology. He was promoted to associate professor in 1966 and to professor

in 1971. Dr. Singh became head of the Plant Pathology Department in 1974 and dean of postgraduate studies in 1984. He retired from GBPUAT in 1989.

Professor Singh had a distinguished career as a dedicated researcher, an inspiring teacher, an able administrator, and a prolific author. He was well known internationally for his research on soilborne fungal plant pathogens and nematodes. Dr. Singh and his associates made major contributions to the understanding of the ecology of *Fusarium*, *Pythium*, and *Rhizoctonia* species and the control of root-knot nematodes with organic amendments. For this work, he received a Certificate of Appreciation by the U.S. Department of Agriculture and was invited by the USDA to share his expertise with several U.S. research stations and universities in 1971. Dr. Singh trained dozens of master's students and 20 doctoral students, and he published his research findings in more than 200 papers in refereed journals. His books—*Plant Diseases, Introduction to Principles of Plant Pathology, Plant Pathogens—The Fungi, Diseases of Vegetable Crops, Diseases of Fruit Crops*, and *Plant Disease Management*—have been used widely by teachers and students of plant pathology in India and Southeast Asian countries. More than 10,000 copies of *Plant Diseases* have been sold (five editions).

Dr. Singh also co-edited *Conceptual and Experimental Plant Pathology* (with U. S. Singh, W. M. Hess, and D. J. Weber) and *A Handbook of Economic Nematology* (with K. Sitaramaiah).

For his work in the field of plant protection, the Indian Council of Agriculture (ICAR) nominated Dr. Singh for a study tour of the USSR in 1981. He also served as a Food and Agriculture Organization/United Nations Development Program consultant in Sri Lanka in 1982. Professor Singh served as a member of several expert panels of ICAR, agriculture universities, and the Union Public Service Commission to recruit agriculture scientists and to select recipients for fellowship awards. He was director and coordinator of ICAR summer schools on the management of soilborne diseases (1980) and downy mildews (1984). Dr. Singh was elected president of the Indian Phytopathological Society (IPS) in 1981 and of the Indian Society of Mycology and Plant Pathology in 1982. For his contributions to science of plant pathology, the IPS bestowed upon him the A. P. Mishra Life Time Achievement Award in 2013.

Professor Singh is survived by his devoted wife, Shakuntala, whom he married in 1951, as well as four sons, one daughter, three brothers, one sister, and several grandchildren. ■

Grad Student Spotlight: Madison Stahr, North Carolina State University



Type of degree program enrolled in:

PhD

What year are you in graduate school?

3rd year

What is your academic department/section

called at your institution?

Entomology and Plant Pathology

Who is your major professor?

Dr. Lina Quesada-Ocampo

How have you been involved in the APS organization?

In addition to attending last year's meeting (having recently become a member), I also joined the Graduate Student Committee.

Please provide a brief description of your research

I work with the postharvest pathogen *Ceratocystis fimbriata*, which causes black rot in sweetpotato. Most of my work relates directly to the growers. I look at nonchemical methods to aid their disease management practices, such as optimizing curing and storage settings to prevent disease growth and identifying viable nonhost rotational crops.

What is something interesting that most people don't know about you?

I really love microscopy. Being able to capture a good picture of your work is not only satisfying, but it also greatly helps capture interest and explain the science I am doing.

What are some interests outside science?

When the weather's nice, I enjoy being outdoors, but when it's not, I spend time watching Netflix or playing on my Xbox.

What is your hometown?

Johnstown, Pennsylvania

What is your favorite pathogen/plant disease?

Other than being partial to my own pathogen, I like cedar apple rust. The fungal structures found on the cedar are amazing.

If you know you are pursuing a specific career sector and want that shared, what is it?

I would like to stay in academia and run an extension and research lab.

How did you become interested in the field of plant pathology?

Having done both field and lab work in undergrad, I decided I wanted a career that allowed me to do both. I also have always been interested in plants, so plant pathology seemed like the perfect choice for me.

Do you have any social media handles that you want included?

@mnstahr



Learn more about the [APS Graduate Student Committee](#) initiatives and student opportunities. Connect with the committee on [Twitter @plantpathgrads](#) and [Facebook](#).

Manager – Seed Certification Laboratory

The Idaho Crop Improvement Association (ICIA), Inc., serves as the official seed certification agency for the state of Idaho. As part of its certification activities, ICIA operates a seed certification laboratory (SCL) in Idaho Falls that performs pathogen testing on seed potatoes to ensure conformity with Idaho rules for seed potato certification. ICIA is seeking a qualified individual to serve as the manager of this laboratory. As the SCL manager, the incumbent will be responsible for all aspects of the testing conducted by the ICIA–SCL. The incumbent will report to and consult with the ICIA SE area manager on all aspects of testing activities. This position is currently open. Applications will be accepted until the position is filled. The interested applicant should send a cover letter, curriculum vitae, and three references to Doug Boze, Exec. Vice President, dboze@idahocrop.com.

Research Associate

Montana State University (MSU) is recruiting a full-time (1.0 FTE), 12-month, fixed-term research associate. The incumbent will perform laboratory, greenhouse, and field research to address plant disease problems in Montana. Continuation of this position is contingent on annual renewal, funding sources, and satisfactory performance. The incumbent will be stationed on MSU's main campus in Bozeman, Montana, within the Department of Plant Sciences and Plant Pathology (PSPP). Research at MSU's Department of PSPP encompasses the plant sciences, ecology, plant pathology, mycology, entomology, virology, genomics, and landscape design. The incumbent will contribute to all aspects of research projects on the plant pathogens of row crops and pulses in Montana. The applicant should send (i) a cover letter describing how his or her qualifications satisfy the required and preferred qualifications, (ii) a curriculum vita or resume, and (iii) contact information for three professional references to David L. Wheeler at david.wheeler7@montana.edu.

Associate Director and Coordinator, Pesticide Safety and Environmental Education (PSEE)

As a senior manager of the Pesticide Safety and Environmental Education (PSEE) program, this person is expected to work closely with the Extension administration to strategically integrate the program's research, Extension, and education activities. The PSEE program provides statewide education and leadership for pesticide-related topics of safety, health,

security, and environmental protection using integrated pest management and occupational safety frameworks with substantial economic and quality-of-life impacts. The PSEE program provides education for Minnesota's 17,000 certified farmers and other agricultural producers through its Private Pesticide Applicator Training (PPAT) program. The PSEE program is seeking a person capable of working with staff and partners at the University of Minnesota and beyond to provide pesticide safety leadership. This position reports to and is accountable to the dean (or delegate) of University of Minnesota Extension. For more information on responsibilities and qualifications, see the [PSEE Associate Director–Coordinator](#) full job description. This position is a full-time, 12-month, annually renewable, academic professional and administrative (P&A) appointment; reappointment is contingent on successful performance and availability of funding. Applications must be submitted online: <https://extension.umn.edu/home/careers>.

Assistant Professor of Plant Pathology

The Washington State University Department of Plant Pathology seeks to fill a 12-month, permanent, full-time, tenure-track position at the rank of assistant professor. The position has research and Extension responsibilities in potato pathology and teaching responsibilities at the undergraduate and graduate levels. The successful candidate is expected to develop a nationally and internationally recognized, externally funded, fundamental and translational research program for diseases of potato grown in Washington State and the Pacific Northwest (PNW). The successful candidate is also expected to develop an innovative Extension outreach program relevant to PNW potato production and to contribute to the teaching mission of the department and college. Teaching duties will include an introductory undergraduate plant pathology course and/or a graduate-level course in the candidate's area of expertise. To learn more about the position, please see www.wsujobs.com/postings/43420. Application screening will begin on April 30, 2019, and remain open until filled. For questions about the position, contact Tobin Peever, Search Committee Chair: tpeever@wsu.edu, 509-335-3754.

Assistant Professor and Extension Plant Pathologist

The College of Agriculture's Department of Entomology and Plant Pathology at Auburn University is seeking candidates for the position of assistant professor and Extension plant pathologist with emphasis in cotton, peanut, small grains and forages, and commercial turfgrass and ornamental plant pathology. This is a 12-month, tenure-track position with 75% Extension and 25% research responsibilities. The successful candidate will be expected to develop a nationally recognized Extension and research program in the area of plant disease management of economically important cotton, peanuts, forages, small grain crops, commercial turfgrass, and ornamentals. Applicants must apply online: <https://aufacultypositions.peopleadmin.com/postings/3354>. Only individuals who provide complete application materials will be considered for this position. Active review of applications will begin March 15, 2019, but the search will continue until the position is filled. Questions about the position should be directed to Edward Sikora, Search Committee Chair, sikorej@auburn.edu.

Research Assistant – Cereal Pathology

The Oregon State University Department of Botany and Plant Pathology invites applications for a full-time (1.00 FTE), 12-month, fixed-term faculty research assistant position in the research program of Chris Mundt. The faculty research assistant will contribute to diverse aspects of a cereal pathology program investigating the biology, epidemiology, and population genetics of plant pathogens and host plant resistance to disease. A significant portion of the position involves collaboration with the Oregon State University wheat and barley breeding programs. The incumbent will interact with faculty, post-docs, and graduate students who are studying the biology, epidemiology, population genetics, and control of plant diseases. Reappointment is at the discretion of the department head. Apply via the Oregon State University website: <http://jobs.oregonstate.edu/postings/71676>. For further information, contact Chris Mundt: mundtc@science.oregonstate.edu. ■



FIND THE LATEST JOBS IN PLANT PATHOLOGY

Search online for new job opportunities in the field of plant pathology using the APS Job Center. Visit the [APS Job Center](#).



SPOTLIGHT



MPMI EDITOR'S PICK

Postinvasive Bacterial Resistance Conferred by Open Stomata in Rice

Zhang and colleagues show that in rice, preventing abscisic acid from closing stomata increases resistance to *Xanthomonas* pathogens, likely by decreasing water availability in the leaf interior. The authors' research suggests that leaf water status serves an important function in resistance to pathogens.



TRENDING ON TWITTER

See what people are tweeting about!

Effect of Tillage and Cultivar on Plant Population, Sudden Death Syndrome, and Yield of Soybean in Iowa

Y. R. Kandel, L. F. S. Leandro, and D. S. Mueller



NEW RESOURCE ANNOUNCEMENT

➦ A New Online Resource to Monitor New or Emerging Plant Pests: MEDISYS Media Monitoring and the Case of *Xylella fastidiosa*

F. Ferilli, G. Stancanelli, J. P. Linde, and M. R. Mannino



NEW PHYTOBIOMES PUBLISHED!

The latest issue of the open-access *Phytobiomes Journal* is available now.



TRENDING

Phytopathology

➦ Addressing the New Global Threat of *Xylella fastidiosa*

R. P. P. Almeida, L. De La Fuente, R. Koebnik, J. R. S. Lopes, S. Parnell, and H. Scherm

Problem Setting and Problem Solving in the Case of Olive Quick Decline Syndrome in Apulia, Italy: A Sociological Approach

C. Colella, R. Carradore, and A. Cerroni

➦ Virus Detection by High Throughput Sequencing of Small RNAs: Large-Scale Performance Testing of Sequence Analysis Strategies

S. Massart, M. Chiumenti, K. De Jonghe, R. Glover, A. Haegeman, I. Koloniuk, et al.

➦ Draft Genome Resources of Two Strains of *Xylella fastidiosa* XYL1732/17 and XYL2055/17 Isolated from Mallorca Vineyards

M. Gomila, E. Moralejo, A. Busquets, G. Seguí, D. Olmo, A. Nieto, et al.

Plant Disease

➦ Consequences of Long-Distance Dispersal for Epidemic Spread: Patterns, Scaling, and Mitigation

P. M. Severns, K. E. Sackett, D. H. Farber, and C. C. Mundt

➦ First Report of *Pectobacterium carotovorum* subsp. *brasiliense* Causing Blackleg and Stem Rot Disease of Potato in Russia

M. V. Voronina, A. P. Kabanova, M. M. Shneider, A. A. Korzhenkov, S. V. Toschakov, K. K. Miroshnikov, et al.

➦ First Report of the Root-Knot Nematode *Meloidogyne enterolobii* on Bananas in Brazil

L. Luquini, D. Barbosa, C. Ferreira, L. Rocha, F. Haddad, and E. Amorim

➦ Genetic Diversity of *Potato virus Y* in Potato Production Areas in Northeast China

Y. Bai, S. Han, Y. Gao, W. Zhang, G. Fan, C. Qiu, et al.

MPMI

Secretome Analysis and In Planta Expression of Salivary Proteins Identify Candidate Effectors from the Brown Planthopper *Nilaparvata lugens*

W. Rao, X. Zheng, B. Liu, Q. Guo, J. Guo, Y. Wu, et al.

Fast-Forward Identification of Highly Effective Artificial Small RNAs Against Different *Tomato spotted wilt virus* Isolates

A. Carbonell, C. López, and J.-A. Daròs

Transcriptomics of *Epichloë*-Grass Symbioses in Host Vegetative and Reproductive Stages

P. Nagabhyru, R. D. Dinkins, and C. L. Schardl

Loss of NifQ Leads to Accumulation of Porphyrins and Altered Metal-Homeostasis in Nitrogen-Fixing Symbioses

M. M. Saad, S. Michalet, R. Fossou, M. Putnik-Delić, M. Crèvecoeur, J. Meyer, et al.

Phytobiomes Journal

➦ The Nodule Microbiome: N_2 -Fixing Rhizobia Do Not Live Alone

P. Martínez-Hidalgo and A. M. Hirsch

➦ Tomato Seeds Preferably Transmit Plant Beneficial Endophytes

A. Bergna, T. Cernava, M. Rändler, R. Grosch, C. Zachow, and G. Berg

➦ Carbon Source and Soil Origin Shape Soil Microbiomes and Tomato Soilborne Pathogen Populations During Anaerobic Soil Disinfestation

A. L. Testen and S. A. Miller

➦ Application of Game Theory to Explore the Dynamics of Host-Pathogen Association in Phytobiomes

M. S. Kim, H. Zhang, and W. B. Shim

Plant Health Progress

Principles of Diagnostic Assay Validation for Plant Pathogens: A Basic Review of Concepts

K. Cardwell, G. Dennis, A. R. Flannery, J. Fletcher, D. Luster, M. Nakhla, et al.

Low Benefits from Fungicide Use on Hard Red Wheat in Low-Disease Environments

A. Friskop, S. Yellareddygar, N. C. Gudmestad, K. B. Fuller, and M. Burrows

Widespread Occurrence of Quinone Outside Inhibitor Fungicide-Resistant Isolates of *Cercospora sojae*, Causal Agent of Frogeye Leaf Spot of Soybean, in the United States

G. Zhang, T. W. Allen, J. P. Bond, A. M. Fakhoury, A. E. Dorrance, L. Weber, et al.

A New Disease of Epimedium Caused by Carnation Ringspot Virus

R. G. Kiambi, M. M. Baumann, and B. E. Lockhart

➦ = Open Access

ART IN PHYTOPATHOLOGY Contest Submissions Due June 15

New Category Announced

The APS Graduate Student Committee is proud to bring you the 2019 Art in Phytopathology contest. The contest is an arena to showcase artwork of students and members in the area of phytopathology. The committee would like to invite all APS members to submit entries for this year's contest! Graduate student participation is especially encouraged. Art in any medium is welcome, but all artwork must be submitted in a digital format. The winners will be announced at Plant Health 2019 in Cleveland, Ohio.

The categories for submission are as follows:

- Arts and Crafts
- Creative Ways to Display Data
- Nature
- Humor
- A NEW category: Magnified

Judges give each entry points based on creativity, aesthetic value, technical merit, shade and color, originality, and relatedness to plant pathology. The winner in each category will receive \$50, and the "Best in Show" will receive an additional \$50. Please send final submissions as email attachments to phytopathart@gmail.com. Visit the [Art in Phytopathology event page](#) for submission details.

Submissions for 2019 are due June 15.

Art in Phytopathology subcommittee members include Jeannie Klein, Megan Buland, Coralie Farinas, Anuj Sharma, Alex Turo, and Bill Weldon. ■



Phytopathology News Launches New Mobile-Friendly Site

APS is excited to deliver a new-and-improved format for *Phytopathology News*! Read and share articles easily across all of your devices, and continue to enjoy the PDF option at your desktop. The new format also opens up exciting opportunities for multimedia in *Phytopathology News*, including video, audio, and more photos to accompany the articles you read and [submit](#). Check out the new format online! ■

Calendar of Events

APS-SPONSORED EVENTS

APRIL 2019

3–5 [APS Northeastern Division Meeting](#), State College, Pennsylvania

MAY 2019

6–10 [APS Caribbean Division Meeting](#), Meliá Marina Varadero, Cuba

22 [APS Webinar](#): Non-linear Path to a Career in Plant Sciences

JUNE 2019

25–27 [APS Pacific Division Meeting](#), Fort Collins, Colorado

AUGUST 2019

3–7 [Plant Health 2019](#): APS Annual Meeting, Cleveland, Ohio

Other Upcoming Events

APRIL 2019

7–11 [19th International Reinhardtsbrunn Symposium on Modern Fungicides and Antifungal Compounds](#), Friedrichroda, Germany

10–13 [1st International Molecular Plant Protection Congress](#), Çukurova University, Adana, Turkey

15–19 [National Plant Diagnostic Network \(NPDN\) National Meeting](#), Indianapolis, Indiana, U.S.A.

MAY 2019

6–9 [ISHS 6th International Symposium on Tomato Diseases](#), Taichung, Taiwan (ROC)

22–24 [International Symposium on Cereal Leaf Blights 2019](#), Dublin, Ireland

JUNE 2019

4–6 [Breeding Crops for Enhanced Food Safety Conference 2019](#), University of California, Davis, U.S.A.

10–21 [Virus Vector Vice Versa \(V4\)](#), University of Bristol, United Kingdom

19–21 [6th International Conference on Sustainable Agriculture in Changing Climate: Strategies and Management](#), Rawalakot, Pakistan

23–28 [20th Fusarium Laboratory Workshop](#), Kansas State University, Manhattan, U.S.A.

23–28 [Biology of Vector-Borne Diseases](#) (6-day course), University of Idaho, Moscow, U.S.A.

JULY 2019

14–18 [IS-MPMI XVIII Congress](#), Glasgow, Scotland

14–18 [Second International Symposium on Vegetable Grafting](#), Charlotte, North Carolina, U.S.A.

7–12 [11th International Workshop on Grapevine Trunk Diseases](#), Penticton, British Columbia, Canada

SEPTEMBER 2019

8–12 [4th Meeting of the International Phytoplasmologist Working Group \(IPWG\)](#), Valencia, Spain

JUNE 2020

7–12 [14th International Conference on Plant Pathogenic Bacteria \(ICPPB2020\)](#), Assisi, Italy

