

## APS Public Policy Board Delivers Public Comments on Two Critical Issues

The APS Public Policy Board (PPB) provides scientific input to legislators and government policy leaders on issues important to our members. Scientific input in the public policy-making process is ever more important amid the inaccurate and misleading information being delivered through social media platforms and other non-peer-reviewed sources. APS is known as a society of plant health scientists who deliver credible research findings through scientific rigor and peer review.

Recently, PPB developed public comments on two critical issues. The first is an open comment on APHIS's intent to prepare an environmental impact statement (EIS) for determination of the nonregulated status of the blight-tolerant Darling 58 American chestnut developed by scientists at SUNY using genetic engineering. With input from several subject matter committees, PPB strongly supports APHIS's intent to prepare an EIS to evaluate the potential impacts of the bioengineered Darling 58 American chestnut. Since no native genes or alleles have been removed or replaced and expression of other genes is not affected by the insertion of the oxalate oxidase gene to

elicit tolerance to the chestnut blight pathogen, PPB asserts that the Darling 58 American chestnut tree does not pose a risk to the environment or to human health, and non-regulated status should be approved. The PPB further emphasized in their comment to APHIS that, based on the scientific evidence known today, approval of nonregulated status for Darling 58 would restore the American chestnut and advance the science for saving other critical species.

The second PPB comment was delivered recently to congressional representatives who have introduced a bill for invasive species prevention. In the letter to six congressional representatives, PPB expressed our strong support for legislation under H.R. 1389, The Invasive Species Prevention and Forest Restoration Act, which will provide new resources for forest restoration and to prevent and mitigate threats from nonnative invasive species. This bill, if passed, would expand APHIS's access to emergency funds to eradicate or contain pest outbreaks. It would further establish a grant program to fund research on strategies aimed at restoring tree species, including biological control of pests and enhancement of pest resistance mecha-



nisms in host trees, while also supporting a separate grant program to promote resistance breeding and other measures to restore forest tree species decimated by nonnative pests.

If there is legislation or proposed regulatory actions that concern you or if there are policy issues that you believe PPB should address, the PPB invites your input and participation. Contact PPB with your ideas. PPB regularly publishes notices in the [APS News Capsule](#) and [Phytopathology News](#) encouraging member comments on key policy issues. ■

## Call for Officer Nominations



APS is seeking individuals with leadership experience and a background of service to the society who are respected in the field of plant pathology and have a vision for APS to serve on APS Council for the 2022 election. The submission deadline is **December 1, 2021**.

[Full details are available online.](#) ■

### In This Issue

Publications . . . . .	4
Foundation Funding . . . . .	5
Education Center . . . . .	6
Graduate Student Spotlight . . . . .	8
People . . . . .	8
Classifieds. . . . .	8
Research Notebook . . . . .	10

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## PLANT PATHOLOGY'S PERPLEXING PAST: THE REST OF THE STORY

# The Bakanae Disease of Rice

Robert M. Harveson, University of Nebraska, Panhandle REC, Scottsbluff

For hundreds, maybe thousands of years, rice cultivation in Japan has suffered due to a disease that results in severe yield loss but for which the cause remained unknown until the mid-20th century. Bakanae disease, also known as “foolish seedling” disease, is one of the oldest known plant diseases in Asia.

The disease is caused by the soilborne fungus *Gibberella fujikuroi* (anamorph *Fusarium moniliforme*). However, this fungal pathogen has also served as a catalyst for improving our knowledge of plant physiology and biochemistry. Its presence led to the discovery of plant hormones known as gibberellins and their characterization as promoters of plant growth. The story of this disease and its effects on the history of plant biology is the rest of the story.

### Early Reports

Although the earliest known report of bakanae disease was published in 1828, it was first described scientifically from rice nurseries in 1898 by Japanese researcher **Shotaro Hori**. He also demonstrated that the causative agent was a fungus he called *Fusarium heterosporum*.

In the late 1890s, farmers reported that rice plants in fields that were infected with this fungal pathogen were taller and more chlorotic than those that were not infected. The characteristic feature of bakanae disease was infected seedlings growing to abnormal lengths that were often incapable of supporting their own weight. The seedlings tended to topple over and die (hence the name “foolish seedling” disease). Other surviving plants were sterile, producing no edible seeds, and yield losses as high as 40% were documented. These events triggered the initiation of extensive research programs by Japanese scientists during the first two decades of the 20th century.

### Early Research

Plant pathologist **Kenkichi Sawada**, working in Taiwan, first suggested that the increased growth of affected plants was due to the bakanae fungus. Sawada found the perfect stage in 1919, calling it *Lisea fujikuroi*. This finding was confirmed by **Eiichi Kurosawa**, who showed that the disease could be reproduced by inoculating plants with sterilized filtrates of the fungus. In 1926 he published a paper demonstrating that these filtrates from fungal cultures accelerated growth in the length of rice seedlings and that the fungus secreted a toxin that stimulated the growth of other crop seedlings as well.

Numerous comprehensive studies followed, and in 1931, the causal agent was identified as *Gibberella*, with its conidial stage as *F. moniliforme*. In 1935, chemist **Tejiro Yabuta** isolated a colorless amorphous powder from culture filtrates of the fungus that when applied in minute amounts effectively induced growth responses in plants. Later the amorphous powder was crystallized into two substances possessing similar biological properties; the substances were named gibberellin A and B, after the fungal genus. It was noted that gibberellin A promoted growth to a greater extent than did gibberellin B. After World War II, these findings in Japan attracted international attention from plant physiologists and chemists.



*Bakanae disease of rice (Gibberella fujikuroi). Infected seedlings (left) may be nearly twice the height of uninfected plants (right), with thin yellow green leaves. (International Rice Research Institute – CC BY-NC-SA 2.0)*

*Perplexing Past, continued on page 3*

## Later Research

In 1950, a group of chemists at Tokyo University determined that gibberellin A was actually a blend of at least three compounds, which they named gibberellins A1, A2, and A3. The role or purpose of gibberellin B is still uncertain.

In the early- to mid-1950s, a group in the United Kingdom headed by **John Grove** procured a purified crystalline compound they called gibberellic acid. In the United States, similar studies were independently conducted almost simultaneously. A group at the U.S. Department of Agriculture facilities in Peoria, IL, under the leadership of chemist **Frank Stodola**, was able to obtain a pure crystalline product they called gibberellin-X. After determining that the two compounds, gibberellic acid and gibberellin-X were identical, it was agreed that the name gibberellic acid would be maintained. It also proved to be indistinguishable from the gibberellin A3 compound identified in Japan.

## Impacts of Bakanae Disease

The discoveries of penicillin and streptomycin in the 1930s resulted in extensive searches for other soilborne fungi with antibiotic capabilities. The recognition of gibberellin fueled a large-scale search for other fungi producing growth-promoting substances in a similar manner. Finding gibberellin brought to light the presence of another plant hormone shortly after the discoveries of the auxins. Today, approximately 25 gibberellins of fungal origin have been identified and distinguished.

The presence of gibberellin-like substances occurring naturally in higher plants also had been suspected. In the late 1950s, several more gibberellins were isolated from immature seeds of beans and water sprouts of mandarin oranges. In total, more than 100 naturally occurring gibberellins are currently known and have been characterized from higher plants.

I find this story to be remarkable. The discovery of gibberellin not only uncovered the presence of a second plant hormone, but its revelation educated us about the existence of additional hormones derived from other sources, not just microbial fungi. All initiated by a plant disease! Now you know the *rest of the story*.

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## Gregory Vogel Genetically Characterizes Several Hundred *Phytophthora capsici* Isolates and Identifies Loci Associated with Important Pathogen Traits Whose Genetic Basis Has Been a Somewhat Open Question for Many Years

Mladen Čučak and Mout de Vrieze



The *Phytopathology* assistant feature editors are shining a light on some of the great graduate student researchers who have recently published in *Phytopathology* by featuring a series of student author biographies in *Phytopathology News*. We are starting this series by highlighting the 2020 Best Student Paper awardee and honorable mentions.

**Gregory Vogel** is a runner-up in the *Phytopathology* Best Student Paper competition for his report: “[Genome-Wide Association Study in New York \*Phytophthora capsici\* Isolates Reveals Loci Involved in Mating Type and Mefenoxam Sensitivity](#).” Gregory genetically characterized several hundred *P. capsici* isolates and identified loci associated with important pathogen traits whose genetic basis has been a somewhat open question for many years. This work was part of his graduate studies at Cornell University under the supervision of **Dr. Michael Gore** and **Dr. Christine Smart**. He defended his

Ph.D. dissertation in 2020 and is currently a plant breeder for Bowery Farming, a vertical farming company based in Kearny, NJ.

Gregory has been fascinated by plant breeding and genetics since high school. Working at a farmer’s market, he was captivated by the seemingly endless variety of colors, shapes, and textures in the different varieties of crops. He answered this call through his work in a carrot, beet, and onion breeding lab as an undergraduate student at the University of Wisconsin. He broadened his focus area and gained exposure to plant pathology during graduate school.

Although his initial interest in pathology came from a breeder’s perspective and an interest in breeding for disease resistance, he became fascinated by everything about plant pathogens and ultimately devoted about half of his dissertation to research on genetic diversity of pathogens. Gregory also enjoys data analysis, experimental design, and statistics, as well learning more and furthering his skills in these areas. He is passionate about transferring knowledge and hopes to get a job with teaching as a formal or informal component.

In addition his *Phytopathology* Best Student Paper honorable

mention research, he is equally proud of his research project that mapped *Phytophthora* blight resistance loci in squash, as this crop can be completely devastated by *P. capsici* under suitable environmental conditions. This work was recently published in *Theoretical and Applied Genetics*.

Gregory enjoys agricultural research and hopes to continue working as an agricultural scientist for many years to come. He finds that his most productive time, when the ideas are really flowing, is late at night when he is writing and listening to music. Like many other scientists, he finds himself brainstorming and coming up with ideas while doing something outside of work, such as going on a run, fishing, or even taking a shower. ■



## Call for 2022 Award Nominations



APS regularly honors individuals who have made significant contributions to the science of plant pathology. We invite you to familiarize yourself with the various APS Awards and nominate someone you feel deserves special recognition.

Award nominations for 2022 will be accepted through

**December 1, 2021.** Please review the award guidelines and nomination instructions prior to submitting your nomination.

[Full details are available online.](#) ■

## Apply for APS Foundation Funding



Applications are currently being accepted for several APS Foundation Awards. [Apply today!](#) Applications for the following awards will be accepted through December 1, 2021.

### For Any Career Level

- Books for the World
- Mathre Education Endowment

### For Undergraduate Students

- Frank L. Howard Undergraduate Fellowship

### For Graduate Students

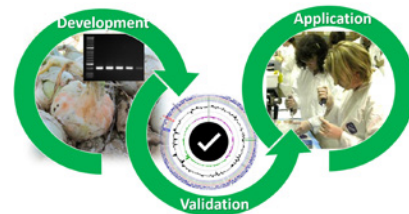
- Browning Plant Medicine and Health Travel Award
- French-Monar Latin American Awards
- Student Educational Award
- Raymond J. Tarleton Student Fellowship ■

## Graduate Students: Apply to be Featured in *Phytopathology News*!

The APS Graduate Student Committee encourages graduate student members to apply to be featured in a *Phytopathology News* [spotlight article](#). Applicants are chosen based on their involvement in APS as student members and their expected graduation dates. [Submit your application](#) for consideration today.

## Call for Papers: Be Included in the First *PhytoFrontiers*™ Focus Issue

Guest Editors **Kitty Cardwell**, **Carrie Harmon**, **Poonam Sharma**, and **James Stack** are spearheading the 2022 *PhytoFrontiers*™ Focus Issue on Diagnostic Assay Development and Validation: The Science of



Getting It Right. This issue will collect a series of articles designed to raise awareness and improve discourse in the plant pathology community about the importance of assay validation for accurate diagnostics.

The guest editors hope that this focus issue will send a strong signal about the need for improvement of the diagnostic assay validation ecosystem across the United States and among trade partners and that the increased dialogue will lead to increased interest in assay validation and publishing validation research in peer-reviewed publications.

[More information on the focus issue](#), including articles in progress, the scope, and suggested article types, is available online. ■

## Nearly 250 Attend Manuscript Reviewing Workshop

On October 5, APS Editors-in-Chief **Alexander Karasev** (*Plant Disease*), **Shaker Kousik** (*Plant Health Progress*), and **Nian Wang** (*Phytopathology*) led the APS Journals—Reviewing a Manuscript 101 Workshop online. Moderated by APS Publications Board Chair **Krishna Subbarao** and attended by 247 people, this was one of the most popular virtual workshops produced to date by APS.

The editors covered many topics, including the goals of editorial peer review, the four reviewer syndromes, typical manuscript workflow, the ethics of manuscript reviewing, and the components of a review.

The recording of the workshop is now [available on-demand](#). ■

# Did You Know? The APS Education Center Includes Freely Available Case Studies

Established in 2000, the [APS Education Center](#) includes freely available peer-reviewed publications, as well as additional resources for plant pathology education. These resources range from introductory materials ideal for K-12 classrooms to more advanced materials, including case studies, that offer many benefits to APS members. Peer-reviewed materials in the APS Education Center are published under the guidance of the *Plant Health Instructor* journal's editorial board.

APS Immediate Past President **Mark Gleason** outlines the benefits of case studies below:

- Case studies are a long-lasting resource for teachers of plant pathology and related disciplines worldwide. Teachers anywhere can download a case study from the APS Education Center website to diversify their classrooms with the down-to-earth, problem-solving, discussion-based exercises embedded in each case study.
- Case studies are fun to teach! It's active learning. Students feel respected and empowered, so they willingly cast off their anonymity to join the discussion.
- Case studies perform an important service for APS as they raise the visibility of the society among educators and students and motivate students to consider plant pathology as a future career.
- Case studies are a great way to advance your career. If your case gets accepted, you'll have a peer-reviewed publication in the scholarship of teaching and learning, which is helpful when applying for jobs involving teaching or other communication-heavy pursuits.
- Case studies are a wonderful way to network. They are peer-reviewed by experienced teachers of plant pathology who provide

great coaching on how to refine the case. Even if you're not an expert in the subject matter of your case, you can enlist help and advice from experts who then become part of your professional network. Later, teachers who use the published case may contact you, and your network expands further.

## New Case Study on Phylloxera Management Is Now Available

*You have purchased land in the Yarra Valley in Victoria, Australia, to plant a new grape vineyard. You could make a great deal of money if your vineyard and winemaking are successful. However, you could also lose everything you invest in your dream.*

This is the central dilemma presented in the latest APS Education Center case study: "[Bugging Out in the Vineyard: Getting to the Root of Phylloxera Management in Victoria, Australia](#)." This case study includes a detailed background of grape phylloxera, including its history and spread, resistance efforts, a glossary, and further background reading. Students are prompted to develop a pest management plan, and discussion questions are included.

Take advantage of APS Education Center case studies and get your students talking! ■



*Grape phylloxera insects (Daktulosphaira vitifoliae) (Michigan State University).*

## APS Pacific Division to Hold 2022 Annual Meeting in Vancouver, British Columbia



The APS Pacific Division is currently planning to hold our 2022 annual meeting in conjunction with the Canadian Phytopathological Society Annual Meeting, June 4–8, 2022, at the [Penticton Lakeside Resort and Conference Centre](#), BC, Canada. The Pacific Division last met with our Canadian colleagues in 2010 in Vancouver, and a joint meeting was also held in 2000. With the 2022 meeting, we hope to continue the Pacific Division's tradition of holding a joint meeting with the Canadian Phytopathological Society every 10 years. Please stay tuned to our [APS Community page](#) and [Pacific Division website](#) for updates as they become available. ■

## USDA NIFA Calls for Grant Panelist Volunteers

Have you ever wondered how panelists are selected for national grant panels? Are you interested in enhancing your grant writing skills and providing expertise for federally funded science research? The U.S. Department of Agriculture (USDA) National Institute of Food and Agriculture (NIFA) is looking for panelists to review and select the best proposals submitted to their hundreds of grant programs. Plant pathologists can provide interdisciplinary expertise that is critical in evaluating proposals and gain valuable career development by participating. Volunteer sign up is [available online](#).

Watch for the December issue of *Phytopathology News* and a conversation with **Dr. Ann Lichens-Park**, NIFA National Program Leader, in which she responds to some of the questions you may ask when considering volunteering as a NIFA grant panelist. ■



# First *Plant Health Progress* Focus Issue Includes 28 Oomycete Articles!



The *Plant Health Progress* Focus Issue on Managing Stubborn Oomycete Plant Pathogens is now complete, with 28 articles all available online. We'd like to thank Guest Editors **Chandrasekar (Shaker) S. Kousik**, **Lina M. Quesada-Ocampo**, **Anthony Keinath**, **Mary Hausbeck**, **Leah Granke**, **Rachel Naegele**, and **Pingsheng Ji** for their work on this impressive issue.

## Editor's Picks from the Focus Issue

Anthony Keinath and Rachel Naegele both selected "[An Accreditation Program to Produce Native Plant Nursery Stock Free of \*Phytophthora\* for Use in Habitat Restoration](#)."

*"Extension plant pathologists routinely recommend practices to manage diseases, but there is little time to follow up with a rigorous assessment of the success of the recommendations. Swiecki et al. conducted 679 assays to check for Phytophthora in leachate from nursery containers and documented that nurseries following the accreditation program were Phytophthora-free."* —Anthony Keinath

*"Using accredited material is an important part of establishing perennial crops for agricultural and natural habitats. However, it can be less attractive to consumers when considering the increased cost of materials. Swiecki et al. clearly demonstrate the importance and effectiveness of using Phytophthora-free nursery stock for establishing healthy restoration sites."* —Rachel Naegele

Leah Granke identified "[Effective Downy Mildew Management in Basil Using Resistant Varieties, Environment Modifications, and Fungicides](#)."

*"This article succinctly summarizes progress to date in breeding and cultural and chemical control. Patel et al. suggest an integrated approach and highlight how multiple control measures combined can be much more effective than relying on a single control method."*

Lina Quesada-Ocampo chose "[A Diagnostic Guide for \*Pythium\* Damping-Off and Root and Stem Rot of Cucurbits](#)."

*"Pythium diseases occur every year in cucurbits, which are economically important crops throughout the United States. This guide provides valuable information for extension practitioners, diagnosticians, and growers alike to battle these diseases."*

All editor's picks are freely available through the end of November. ■

# A Note to APS Authors about Publication Delays

We shared earlier this year that delays at our production vendor resulted in a slower than normal manuscript turnaround time. Because of this slowdown, many articles have not moved from "Just Published" and our issues are behind schedule. The APS publications team is working hard to get articles and issues back on track, and we expect rapid progress over the next few months, with a goal of being back on schedule in early 2022.

Our editorial boards and publications team are working hard. The October issue of *Plant Disease* will be breaking records as the longest journal issue in APS history with 576 pages. Together, all the APS journals are exceeding the previous year's page counts. We thank all our authors, reviewers, and editors for their important and tireless efforts that are advancing the field of plant pathology.

In the meantime, check out all the recently published content in *Phytopathology*, *Plant Disease*, *MPMI*, *Plant Health Progress*, *Phytophthora Journal*, and *PhytoFrontiers*. ■

## WSU Plant Pathology Exhibition Held at Fall Festival

The Plant Pathology exhibition held on September 9, 2021, at the Fall Festival on the Pullman campus of Washington State University (WSU) attracted crowds of visitors. The festival was organized by the WSU College of Agriculture, Human, and Natural Resource Sciences to welcome new and returning students and to offer students, faculty, and staff an opportunity to interact. The exhibition was set up by graduate students and included posters introducing the science of plant pathology and the department, samples of plant diseases, and specimen slides for visitors to look at microscopic structures of various plant pathogens. Several graduate students, including **Joseph Mellow**, **Natalie Sanchez**, **Kristen Hamel**, **Ninh Khuu**, **Samodya Jayasinghe**, and **Hannah Baker**, and department faculty and staff participated in the exhibition. **Janice Parks**, a graduate student in the department, won a \$500 scholarship at the festival. ■



Graduate students at the exhibition (left to right): Joseph Mellow, Natalie Sanchez, Kristen Hamel, Ninh Khuu, Samodya Jayasinghe, and Hannah Baker.



### What type of degree program are you enrolled in?

Master's program, Louisiana State University.

### What year are you in graduate school?

I am beginning the second year of my master's program.

### What is your academic department/section called at your institution?

Department of Plant Pathology and Crop Physiology.

### Who is your major professor?

Dr. Sara Thomas-Sharma.

### Are you an APS member?

Yes.

### How have you been involved in the APS organization?

I presented my research at Plant Health 2021 and became a member of the Graduate Student Committee.

### Please provide a brief description of your research.

My research is focused on understanding the genetic diversity of *Rhizoctonia solani* AG1-IA that causes aerial blight in soybean, as well as developing a greenhouse screening protocol to screen soybean varieties for resistance to aerial blight.

### What's something interesting most people don't know about you?

I grew up on a coffee farm, and we process

coffee beans until they become a cup of coffee!

### What are some of your interests outside of science?

I like playing soccer and volleyball.

### What is your hometown?

Honduras, Central America.

### What is your favorite pathogen/plant disease?

*Rhizoctonia solani*.

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

I became interested in plant pathology because of the diseases that we faced on our coffee farm (like coffee rust), so I wanted to learn more about it and have been studying agriculture since then and now plant pathology.

### Do you have any social media handles that you want to share?

E-mail: [krodriguezherrel@lsu.edu](mailto:krodriguezherrel@lsu.edu) ■



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

## People

### New Position



**Dr. Adrian Percy**, chief technology officer for global agrochemical firm UPL, became the first executive director of the North Carolina Plant Sciences Initiative (N.C. PSI) on November 1, 2021.

N.C. PSI takes an interdisciplinary, team-based approach to pressing needs such as feeding a growing population with dwindling farmland and developing new varieties, technologies, and practices that will help growers adapt to droughts, pests, flooding, and other effects of climate change. It will be headquartered in a new building on NC State's Centennial Campus. ■

## Classifieds

### Propagation Manager

Monrovia (Cairo, Georgia)

#### Summary

The Propagation Coach will oversee the management of the Propagation Department to include all aspects of production planning, propagation methods, inventory management, liner quality and readiness, department maintenance, and budgetary planning and execution, as well as capital needs planning and execution.

#### Duties and Responsibilities

##### Business Results

1. Lead the team toward a culture of excellence, using MNQ principles to continually improve the operating processes. The improvements should lead to: a) Increased productivity and superior liner quality, with a focused effort on reducing scrap in all phases of production; and b) Increased use of mechanization.

2. Lead in the implementation of key strategic initiatives within the department. a) Reduce liner purchases through improved work order fulfillment. b) Increase use of unrooted cuttings and other lower cost supply options. c) Implement an effective seeding program for appropriate items. d) Implement a grafting program for specialty crops. e) Implement increased usage of in vitro propagated plant material and increased use of stock plants for divisions and cutting stock.
3. Lead departmental efforts in establishing and tracking reduced residency in liners and support the production of improved propagules to facilitate reduced residency of finished sizes and shift material.

*Classifieds, continued on page 9*



4. Work with Production Planning Coaches for all plant transfers between nurseries, as well as short- and long-term production planning.
5. Responsible for inventory management and anticipation of liner shortfalls, as well as the creation of excess liner list.
6. Oversee the growing stages of rooted liner production and large plug programs to meet established ready dates and maintain peak plant health. This will include all pruning schedules of liner material to maximize liner quality, as well as the sorting and grading of liners for canning and sales.
7. Serve as the lead Horticulturalist within the Propagation Department, providing support in all aspects of proper and effective plant production and working with the Cuttings Coach on process and research opportunities.
8. Responsible for the New Plant Program in Georgia to include the Bull Pen and the expedient implementation of net maximums of new plant selections.
9. Ensure that all departmental activities are carried out in compliance with local, state, and federal regulations and laws.
10. Ensure sound working relationships with Monrovia Craftsmen and the promotion of our Grow Beautiful culture.

**Research Molecular Biologist (Plants)/  
Plant Pathologist/Geneticist Plants  
GS-12/13**  
**USDA ARS Cereal Disease Lab** (St. Paul,  
Minnesota)

The USDA, ARS, MWA, Cereal Disease Laboratory (CDL), at the University of Minnesota, St. Paul, MN, is searching to fill a Research Molecular Biologist (Plants)/ Plant Pathologist/Geneticist Plants position. The incumbent will be responsible for molecular genetics, genomic, and/or evolutionary studies of cereal rust pathogens, with the long-term goal of developing new approaches for control of cereal rust diseases based on fundamental knowledge of rust genomes, host-parasite interactions, and/or rust fungal biology.

U.S. Citizenship is required. For further information and complete application instructions, go to the USAJobs [website](#) and refer to announcement number ARS-D21MWA-11244738-CLO. Applications must be received by the closing date of October 28, 2021.

Contacts: Application procedure:  
**Christina Olshawsky** [christina.olshawsky@usda.gov](mailto:christina.olshawsky@usda.gov); 309-681-6482.

Scientific information: **Dr. Shahryar Kianian** [Shahryar.kianian@usda.gov](mailto:Shahryar.kianian@usda.gov); 612-624-4155.

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**Research Molecular Biologist/  
Plant Pathologist/Geneticist GS-  
0401/0434/0440/-12/13**

**USDA ARS Cereal Disease Lab** (St. Paul,  
Minnesota)

The incumbent is a Research Molecular Biologist/Plant Pathologist/Geneticist at the Cereal Disease Research Unit located in St. Paul, Minnesota. The Cereal Disease Laboratory is a national center and international point of contact for cereal rust and *Fusarium* head blight research, with the objective of reducing damage caused by rusts and *Fusarium* head blight on small grains. The incumbent will lead investigations into fungal

genetic, genomic, cellular biology, and/or evolution of *Fusarium* species with the long-term goal of developing new approaches for controlling the disease, such as selecting and identifying durable resistance based in the fundamental knowledge of host-parasite interactions. Also, the incumbent will work independently, but coordinate research activities with other ARS scientists in the unit, as well as with pathologists and geneticists at the University of Minnesota and elsewhere as part of a national cooperative research program.

For further information and complete application instructions, search for announcement ARS-D21MWA-11249154-JML [online](#).

U.S. Citizenship is required. Applications must be received by the closing date of October 24, 2021.

USDA/ARS is an equal opportunity employer and provider. ■

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## Calendar

### APS-SPONSORED EVENTS

#### NOVEMBER 2021

[Workshop: Developing a Toolkit for Effective Extension and Outreach Edit](#)

#### DECEMBER 2021

[Deadline for APS Officer Nominations](#)

[Deadline for 2022 APS Award nominations](#)

[Deadline for APS Foundation Award Applications](#)

#### AUGUST 2022

[Plant Health 2022](#)



### 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

### Manuscript Reviewing Workshop Recording Freely Available

On October 5, Editors-in-Chief **Alexander Karasev** (*Plant Disease*), **Shaker Kousik** (*Plant Health Progress*), and **Nian Wang** (*Phytopathology*) led a free online workshop on the basics of manuscript reviewing. View the recording now: [APS Journals—Reviewing a Manuscript 101](#).

### New *Microgreens* Episodes!

Don't miss the last two installments in the three-part series on The Lewis Lab. Episode two discusses the role of side projects in research and diversity, equity, and inclusion in research spaces. Listen to the podcast [here](#) or find and subscribe to *Microgreens* on your preferred podcast platform.

### Soybean Study Designs and Implements a More Effective and Less Toxic Bio-fungicide

A recent article in *Phytopathology* summarizes an attempt to use dsRNA molecules, which are nontoxic by themselves and present in all living organisms, to manage fungal plant diseases. "DsRNAs are not toxic to nontargeted organisms or harmful to the environment. They carry species-specific genetic information that makes them toxic only to the targeted pathogens," said corresponding author **Zhi-Yuan Chen**.

### Fungal Transplants from Close Relatives Help Endangered Plants Fight Off Disease

For the endangered Hawaiian plant *Eugenia koolauensis*, fungi could be both its demise and its savior. The fungal pathogen myrtle rust has been devastating populations of the endemic tree, along with many other native and cultivated plants. However, researcher **Mason Chock** thinks part of the solution might be ... more fungi. ■



## TRENDING

### Phytopathology

- 🍃🔗 Opportunities for Improved Potato Late Blight Management in the Republic of Ireland: Field Evaluation of the Modified Irish Rules Crop Disease Risk Prediction Model  
M. Cucak, R. de Andrade Moral, R. Fealy, K. Lambkin, and S. Kildea
- 🔗 Impact of the United States Department of Agriculture, Agricultural Research Service on Plant Pathology: 2015–2020  
T. L. Widmer and J. M. Costa
- 🔗 Region-Wide Comprehensive Implementation of Roguing Infected Trees, Tree Replacement, and Insecticide Applications Successfully Controls Citrus Huanglongbing  
X. Yuan, C. Chen, R. B. Bassanezi, F. Wu, Z. Feng, D. Shi, et al.

### Plant Disease

- 🍃🔗 Sporulation Potential of *Phytophthora ramorum* Differs among Common California Plant Species in the Big Sur Region  
L. M. Rosenthal, S. N. Fajardo, and D. M. Rizzo
- 🔗 Silicon's Role in Plant Stress Reduction and Why This Element Is Not Used Routinely for Managing Plant Health  
W. Zellner, B. Tubaña, F. A. Rodrigues, and L. E. Datnoff
- 🔗 Does Use of Atoxigenic Biocontrol Products to Mitigate Aflatoxin in Maize Increase Fumonisin Content in Grains?  
A. Ortega-Beltran, D. Agbetiamah, J. Atehnkeng, T. D. O. Falade, and R. Bandyopadhyay

### MPMI

- 🍃🔗 Three Common Symbiotic ABC Subfamily B Transporters in *Medicago truncatula* Are Regulated by a NIN-Independent Branch of the Symbiosis Signaling Pathway  
S. Roy, A. Breakspear, D. Cousins, I. Torres-Jerez, K. Jackson, A. Kumar, et al.
- 🔗 Rapid Methodologies for Assessing *Pseudomonas syringae* pv. *actinidiae* Colonization and Effector-Mediated Hypersensitive Response in Kiwifruit  
J. Jayaraman, A. Chatterjee, S. Hunter, R. Chen, E. A. Stroud, H. Saei, et al.

- 🔗 Salt Stress Enhances Early Symbiotic Gene Expression in *Medicago truncatula* and Induces a Stress-Specific Set of Rhizobium-Responsive Genes  
S. Chakraborty, H. E. Driscoll, J. E. Abrahante, F. Zhang, R. F. Fisher, and J. M. Harris

### Plant Health Progress

- 🍃🔗 Diagnostic Guide: Fusarium Crown Rot of Winter Wheat  
C. H. Hagerty, T. Irvine, H. M. Rivedal, C. Yin, and D. R. Kroese
- 🔗 Characterization of *Podosphaera macularis* Derived from the Hop Cultivar 'Strata' and Strata's Resistance to Powdery Mildew in Oregon  
M. Block, M. S. Wiseman, and D. H. Gent
- 🔗 Shifting Prevalence of Plant-Parasitic Nematodes in Orchards and Vineyards of the Okanagan Valley, British Columbia  
T. Forge, P. Munro, A. J. Midwood, L. Philips, K. Hannam, D. Neilsen, T. Powers, and I. Zasada

### Phytobiomes

- 🍃🔗 The Citrus Microbiome: From Structure and Function to Microbiome Engineering and Beyond  
Y. Zhang, P. Trivedi, J. Xu, M. C. Roper, and N. Wang
- 🔗 Comparative Genomic Understanding of Gram-Positive Plant Growth-Promoting *Leifsonia*  
N. P. Nordstedt, V. Roman-Reyna, J. M. Jacobs, and M. L. Jones
- 🔗 The Leaf Bacterial Microbiota of Female and Male Kiwifruit Plants in Distinct Seasons: Assessing the Impact of *Pseudomonas syringae* pv. *actinidiae*  
A. Ares, J. Pereira, E. Garcia, J. Costa, and I. Tiago

### PhytoFrontiers™

- 🔗 Epidemiological Characterization of Lettuce Drop (*Sclerotinia* spp.) and Biophysical Features of the Host Identify Soft Stem as a Susceptibility Factor  
B. E. Mamo, R. L. Eriksen, N. D. Adhikari, R. J. Hayes, B. Mou, and I. Simko
- 🔗 Development and Use of a Seedling Growth Retardation Assay to Quantify and Map Loci Underlying Variation in the Maize Basal Defense Response  
Y. Wang, J. Holland, and P. Balint-Kurti ■

🍃 = Editor's Pick   🔗 = Open



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