USDA ARS National Center for Genetic Resources Preservation Provides Key Backup Service for Active Culture Collections

David M. Geiser, The Pennsylvania State University, dgeiser@psu.edu

The United States Culture Collection Network (USCCN) met October 13–14, 2015, at the USDA ARS National Center for Genetic Resources Preservation (NCGRP) in Ft. Collins, CO. USCCN is the product of an NSF Coordination Network grant (DBI-1203113) focused on the development of a sustainable national community for microbial culture collections. USCCN was initiated in 2012, largely in response to the multiyear efforts of the APS Public Policy Board to improve the prospects for support and education associated with culture collections devoted to plant-associated microbes. Of particular concern are threatened, orphaned, and refugee collections that have lost their curatorial support and/or home institutions.

NCGRP was chosen to host the 2015 meeting due to its key role in providing resources for backing up microbial collections; this support is available to microbial collections that are actively curated and distributing cultures, but the NCGRP service is for storage only. Collection curators should contact a member of the USCCN steering committee if their collection fits these criteria and is in need of backup.

Research Coordination Networks (RCN) Principal Investigator Kevin McCluskey, the curator of the Fungal Genetics Stock Center at Kansas State University, received additional support to bring in representatives of two non-microbial living collections, the Duke Lemur Center in Durham, NC, which houses the world’s largest collection of prosimian primates, and the Montgomery Botanic Garden in Miami, FL, a living resource for the preservation of palm and cycad diversity. A major goal of the meeting was to identify common strategic needs and opportunities shared between microbial collections and their plant and animal counterparts, which have similar missions and similar challenges. Among other topics, presentations focused on diverse bacterial, fungal, and algal collections in the United States and Canada. Highlights of the meeting were tours of NCGRP facilities, the largest of their kind devoted to maintenance and storage of plant germplasm, and a thought-provoking keynote address on the Phytobiome Initiative by Colorado State University Professor Jan Leach.

USCCN participants met in Ft. Collins, CO, at the USDA ARS National Center for Genetic Resources Preservation (NCGRP). Participants learned about cryopreservation protocols during their tour of the NCGRP facilities in Ft. Collins.

ANNUAL MEETING

Special Sessions Announced

Planning for the 2016 APS Annual Meeting in Tampa, FL, is well underway. A wide variety of topics will be covered in the 22 Special Sessions that were recently announced, from balancing family and career to innovative new products and services to disease management. Visit www.apsnet.org/meet to view all of the descriptions. Additional oral and poster presentations will be selected from submissions received during the call for abstracts period, February 1–March 15, 2016.
Editor’s Corner

My First Column Wasn’t Titled Alpha, but Let’s Call This One the Omega

Doug Jardine, Kansas State University, PhytoNewsEditor@scisoc.org

And so it ends; six years as editor-in-chief (EIC) of Phytopathology News and this, the last of 65 Editor’s Corners. In my first column, I stated that I hoped I would be able to live up to the high standards set by those EICs that came before me. I will leave it to you, the readers, to decide how I did.

Before I go any further, however, I have some very important people on APS staff that I would like to publicly thank. These are the people who truly do the heavy lifting in making sure the newsletter looks the way it looks and reaches you in a timely manner. First, I would like to thank Managing Editor Michelle Bjerkness. I have had many roles within the society over the years and Michelle has always been my go-to person when I have questions or need advice. Her role as managing editor has been no different. And then there is Editor Amanda Baumann. It is hard to put into words what she has meant to me. When I started, I lacked confidence and certainly skill in writing a monthly column. With her guidance and encouragement, however, I finally got the hang of it. A check of my e-mail folders reveals that we have exchanged a staggering 900 e-mails in the past six years in order to bring the newsletter to you. I literally could not have done it without her. Not only has she been my editor, she has been my friend. And then there are the designers, first Agnes Walker, and more recently, Dawn Mathers. Designers are the people who take all of the submissions, ads, calendars, and other items and then work their magic to make the newsletter look the way it looks. Through their work, there have been subtle changes in mastheads and design that may not have been even noticed by you the readers, but they have made the newsletter more attractive and user friendly.

People often ask me where the ideas for columns come from. The answer is that it is a very eclectic set of sources. Back issues of Phytopathology News have been a major source, as well as the history pages on the APS website. Celebrations of the 150th anniversary of the Morrill Act, the 100th anniversary of the Smith-Lever Act, and the 50th anniversary of the publishing of Silent Spring also provided fodder for columns. Sometimes, reading a popular periodical such as Time (“Interstellar: Where Hollywood Meets Plant Disease and Climate Change”) shook an idea out of my head. Annual meetings and APS elections were always good for one or two columns each year and sometimes, just conversations with you, the readers, at various APS activities sprang an idea into my head such as October’s column “Thanks for the Annual Meeting Memories, Even the Not So Good Ones.” And then there is Louis L’Amour. I first mentioned his book, Riding for the Brand, in the December 2013 column, “What’s in a Name Anyway?” More recently, in the June 2015 issue, the column’s title was “Riding for the Brand.”

One of my goals as EIC was to increase the number of Letters to the Editor. While there were no hot topics during my time as editor that generated numerous letter exchanges, such as changing the society’s name, or as highlighted in last month’s column, digital diagnosis, I am very appreciative to those of you who took the time to write a letter. I am equally appreciative for the many one- or two-line e-mails sent to me thanking me or commenting on a particular column and occasionally even correcting me on things I didn’t get quite right. Using e-mails as a barometer, the column that most struck a chord with readers was the July 2011 column, “The Woes of Field Research.”

I have been fortunate through the confidence of you, the society’s members, to serve APS in many capacities, including North Central Division councilor, secretary, and director of the Office of Public Relations and Outreach (OPRO). It is my service as EIC of Phytopathology News, however, that was the most fun and that I cherish the most. From 1992 to 1993, I had the opportunity to be in the first North Central Extension Leadership Development (NELD) class. While I may not have used or put into practice everything that I learned from that program, one thing has stayed with me all these years. We spent considerable time studying and discussing Robert Greenleaf’s concept of servant leadership. It just made so much sense to me. With that said, I hope that I have provided leadership to APS through my service to you, the members, as EIC of Phytopathology News.

Six years has passed by so quickly, but indeed, six years is enough. I will look forward to the next APS volunteer opportunity that may come my way. In the meantime, thank you for all your kindnesses. Next month, Kenny Seebold takes the steering wheel. Kenny will be the first member from industry to serve as EIC. Good luck, Kenny.
New Phytopathology Article Reviews Devastating New Race of Fusarium Wilt of Banana

Bananas are among the world’s most important fruits, commanding $44 billion in economic value in 2011 alone. But this fruit is more than just a favorite among consumers throughout the world. It is both a nutritional and economic staple for many of the 130 nations that produce it, particularly Costa Rica, Ecuador, Cameroon, and the Philippines.

While many bananas are exported, 85% of them are consumed by producers or sold in local or regional markets, making them a vital dietary component for those in Africa, southern Asia, and tropical America. So, when a historically devastating banana disease threatens this important food supply, it can have a profound local impact.

Case in point: Fusarium wilt of banana, an incurable and historically significant plant disease that has re-emerged in the form of a new race, Tropical Race 4 (TR4), which threatens the previously resistant Cavendish cultivars of banana. These cultivars account for approximately 45% of all banana production worldwide.

A new and innovative Phytopathology journal article published by Randy C. Ploetz, professor of plant pathology at the University of Florida’s Tropical Research and Education Center, provides more than just a thorough summary of current research and what is known about Fusarium wilt and its causal agent, *Fusarium oxysporum* f. sp. *cubense*; the article also chronicles the re-emergence of Fusarium wilt of banana, i.e., Panama disease, and the threat that Tropical Race 4 poses to exporters and producers of this important crop.

“Fusarium Wilt of Banana” uncovers a variety of important points for the relatively few researchers who do not study tropical plant diseases:

- The TR4 race of Fusarium wilt is dramatically spreading in the Eastern Hemisphere.
- Resistance to Fusarium wilt is poor in various breeding targets, including important dessert and cooking cultivars.
- Due to the widespread use of the now-susceptible Cavendish cultivar, resistance to this and other diseases is necessary.
- Fusarium wilt of banana not only affects exports. It has a profound effect on both the economy and the local food supply for many countries.

- More research on Fusarium wilt of banana is required.

“In general, tropical crops and the diseases that impact tropical crops, such as banana, are poorly understood and appreciated by those in the developed world,” says Ploetz. “(But) increased awareness of the renewed threat that this disease poses to production may encourage research support from exporters and other stake-holders.”

This article can be found in the December 2015 issue of *Phytopathology* and will be freely available through January 15, 2016.

Letter to the Editor

Campus Adventures & Accommodations

I have consistently enjoyed your monthly Editor’s Corner and have occasionally thought about writing to share something personal that caused me to resonate with that month’s topic. This time, I am following through.

The joint APS-CPS meeting on the campus of Guelph University in 1984 was my year as APS president. My wife and I arrived early for a meeting of the Editorial Board of *Annual Review of Phytopathology*, which I joined as the incoming editor. My wife avoided APS campus meetings, not wanting to bunk in a dorm room, but I convinced her that, as APS president, we would have a presidential suite, probably in the student union building. We were booked into a local motel for the two days of the Editorial Board meeting, which gave me time to check out where we would be staying during the APS meeting. To my shock, I was told that the presidential suite was the caretaker’s room in one of the dorms. This was a basement room with two narrow double beds, no TV, no phone, no air conditioning, and all concrete walls.

My wife came to the meeting with her foot in a cast because of foot surgery. With a long flight of stairs as the only way to this room, I told the chair of local arrangements that we would not be able to stay in that room. Needless to say, that was very awkward, but had to be done. Meanwhile, I had alerted Ray Tarleton of my dilemma, and he was just as surprised and shocked as me. Everything Ray did for APS was first class, so putting the APS president and wife in a basement dorm caretaker-room was not acceptable and he told me that he would get us into something more acceptable.

Alas! There were no vacancies in anything close to the campus, a must considering my schedule as president. The APS staff members were booked into the same motel where we had been staying, and whatever Ray did, maybe had a couple of staff double up, I am not sure, but we got a room.

But that was not the end. We were told by the motel management that we only had that room for that night and that we would have to move the next day or leave if no room opened up. While I was doing my jobs as APS president, my wife waited each day for word that we had a room for another night, and when one opened up, she moved us. Not surprisingly, each room was identical—a single queen bed, dresser, TV, chair, nothing special. That scenario was repeated two more days before we were allowed to stay in the same room until we checked out. As near as we could determine, room reservations at this motel involved writing the name of the reserving party into a book that identified the room reserved for them. When asked why we had to move, my wife was told that someone else was booked to stay in that room. Rather than move customers on paper, we had to move physically.

The following year when I was immediate past president, and we met in Reno, Ray arranged a fabulous room for Bev and me. Bev and I saw Ray and Steve Nelson when we visited our mutual friend Ed Kendrick in Tucson in February. We always remember and laugh at what happened at that meeting. But I also think what happened to Bev and I at the Guelph meeting was the crowning blow to campus meetings. Now you know “the rest of the story.”

All the best, and keep up the good work. —Jim Cook
VertShield—an Online Resource for Verticillium Species Research

Patrik Inderbitzin, patrik.inderbitzin@gmail.com, Alexander I. Putman, aiputman@ucdavis.edu, and Krishna V. Subbarao, kvsubbarao@ucdavis.edu, University of California, Davis; Seogchan Kang, cxk55@psu.edu, and Bongsoo Park, bxp12@psu.edu, The Pennsylvania State University

Verticillium is a small but agriculturally important genus of 10 species that are difficult to identify. To further Verticillium research and management by supporting accurate species identification, we developed VertShield, a web platform available at www.verticilliumdb.org. VertShield incorporates several identification tools adapted from the recent literature (Inderbitzin et al., PLoS ONE 6:e28341) and contains practical advice on how to identify and study Verticillium species. The tools include a morphological key, simplex and multiplex PCR assays, and a blast option for queries against a curated database of phylogenetically informative sequences. The General Identification Guide located under the Identification Tools & Guide tab informs users about how to generate and interpret data for species identification. A combination of these tools permits a robust evaluation of species affiliation, and for V. longisporum, lineage affiliation. VertShield also archives commonly used lab protocols (e.g., storage of Verticillium strains, pathogenicity tests) and images of typical Verticillium disease symptoms in various hosts. We welcome community contributions and suggestions, and envision that this effort will support Verticillium research, disease management, and new species discovery. Correspondence should be sent to Krishna V. Subbarao at kvsubbarao@ucdavis.edu.
New Book Provides Foundational Research for the Management of Bacterial Plant Diseases

One of the best sources of innovation for managing bacterial plant pathogens is an understanding of their virulence mechanisms. *Virulence Mechanisms of Plant-Pathogenic Bacteria*, a new book published by APS PRESS, helps plant scientists build that foundation for the creative, effective, and ongoing management of bacterial diseases by highlighting the latest research on virulence mechanisms in the context of the most important bacterial diseases in agriculture. This innovative and comprehensive new book was developed by a team of top researchers in this field, making it the most current and authoritative available for researchers and students in the fields of plant pathology, microbiology, bacteriology, and plant-microbe interactions.

In nearly 500 pages, it covers the many basic concepts related to virulence mechanisms of bacteria, such as quorum sensing, biofilms, pathogen-associated molecular patterns (PAMPs), cell surface polysaccharides (SPSs), fimbrial surface attachment structures, cyclic diguanosine monophosphate (c-di-GMP) regulation, bacterial secretion systems and effectors, cell-wall-degrading enzymes, regulation, metals as regulators of virulence, and high-throughput sequencing technology. *Virulence Mechanisms of Plant-Pathogenic Bacteria* also offers case studies of virulence mechanisms in significant bacterial pathogens, including ‘*Candidatus Liberibacter*’ spp., *Xylella fastidiosa*, phytoplasmas, spiroplasmas, *Erwinia amylovora*, *Ralstonia* spp., *Xanthomonas* spp., *Pectobacterium* and *Dickeya* spp., and *Streptomyces* spp. Visit www.shopapspress.org to learn more about this and other important titles from APS PRESS.

Order the APS Image Database with Your Membership Renewal

Whether you are renewing your APS membership via paper or online, you have the option to get the latest APS images in digital format for just $49 annually. Read on to learn why you should add this subscription.

The APS Image Database is a collection of images for professors, extension experts, and consultants who need to quickly and easily find images for presentations, extension documents, class handouts, and other educational resources. It includes high-quality digital photos of pests and disorders for a variety of crops, including alfalfa, apples, beans, brassicas, chickpeas, lentils, peas, rhododendron, sweet potatoes, tomatoes, and wheat. And with crops like grape, hop, soybean, and others coming soon to this continually growing collection, there are more reasons than ever to subscribe. It’s the expert coverage of diseases and pests that makes this easy-to-search resource a particularly effective classroom and training tool. Prime visual examples of fungal, bacterial, and viral diseases—plus insect pests, mites, worm pests, and noninfectious disorders—tell the story of pests and their symptoms in stunning visual detail. These images also include common names, species, host names, and other scientific information associated with them. All of this information is peer-reviewed by expert plant pathologists. And with just one easy click, educators and presenters can download instant fact sheets and handouts to help reinforce learning.

The APS Image Database can also be a useful diagnostic aid for industry experts, students, and state and county extension specialists. Subscribe today for just $49 to help support your own work, plus your society’s many activities. Simply check off the APS Image Database on your print or online member renewal form. Not renewing this month? No problem! Visit www.apsnet.org/imageDB, to subscribe anytime. The cost of your subscription will be prorated to coincide with your membership period. Note: Subscribers have unlimited use of these images for educational, non-commercial use. A separate fee and written request for reprints is required for commercial use of images. This product is not available to institutions or libraries.
Late Blight and Other Phytophthora Diseases Emerging in India

More than 120 different Phytophthora species affect tropical and horticultural crops globally and are an emerging problem in India. A four-day symposium on “Phytophthora: Taxonomy, Genomics, Pathogenicity, Resistance, and Disease Management” was held in Bengaluru, India, September 9–12, 2015. The meeting, organized by Pallem Chowdappa of the ICAR-Central Plantation Crops Research Institute, included plenary presentations by invited international guests on emerging Phytophthora diseases, taxonomy and phylogeny, population biology, genomics, pathogenesis, epidemiology, host resistance, and disease management.

A team of international Phytophthora researchers gave plenary talks on the following topics:

• Current and emerging Phytophthora diseases—Research challenges and impact, André Drenth
• Evolutionary origins of U.S. and famine-era lineages of Phytophthora infestan, Jean Ristaino
• New tools to understand evolving populations of Phytophthora infestan on regional, national, and international scales for improved late blight management, David Cooke
• Genome evolution in filamentous plant pathogens, Sophien Kamoun
• From genomics to effectors: How understanding oomycete biology has contributed to disease control, Brett Tyler
• Management of Phytophthora diseases in the tropics, David I. Guest

The well-attended meeting also included inaugural and cultural events, a field tour, a trade show, and a valedictory honors ceremony.

A symposium report and recommendations for future Phytophthora research in India were given by the international team. The team of late blight researchers met with Indian late blight researchers and discussed the need for global monitoring of Phytophthora infestans populations. Chowdappa reported the emergence of the 13_A2 lineages of the pathogen in India and its shift to tomato.

Sanjoy Guha Roy from West Bengal State University discussed his work on characterizing late blight outbreaks in the northwest of the country in 2014. Sanjeev Sharma from the Central Crops Research Institute in Shimia presented data on a decision support system for late blight, development of transgenic varieties, and characterization of populations in India. The need for coordination among the Indian and global research teams, including Euroblight and USAblight and a global monitoring network for late blight, were discussed.

In addition, a workshop on Rapid Diagnostic Tools for Identification of Phytophthora species on Horticultural Crops was organized by Jean Ristaino with the assistance of Pallem Chowdappa and David Cooke. Held at the ICAR-Central Plantation Crops Research Institute, Bangalore, India, on September 8, 2015, preceding the 3rd International Phytophthora Symposium. More than 120 participants applied for the workshop that included 30 students from diverse research institutes in India. The hands-on laboratory training in morphological and molecular identification of Phytophthora species included use of a diagnostic Lucid key, PCR and molecular sequence-based identification, and rapid assays for identification of Phytophthora infestans.

A workbook was distributed to workshop participants and is available online at [www.usabligh.org/sites/default/files/upload/image/Workshop lab protocols_0.pdf](http://www.usabligh.org/sites/default/files/upload/image/Workshop lab protocols_0.pdf).
Applications Due for 2016 Funding Opportunities

The APS Foundation has several awards that are now accepting applications:

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<th>Award</th>
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<td>International Travel Award</td>
<td>Support for early and mid-career members native to and working in developing countries to attend the annual meeting ($1,500)</td>
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<tr>
<td>I. E. Melhus Graduate Student Symposium Awards</td>
<td>Graduate student support to present at annual meeting symposium on bacteriology ($500)</td>
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<td>JANE Research Award</td>
<td>Research funding for cooperation between U.S. and developing country scientists ($3,000)</td>
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<td>Plant Pathology Experiential Award</td>
<td>Funds for graduate students to facilitate career and research development experiences with organizations outside of academia ($500)</td>
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<tr>
<td>Schroth Faces of the Future Symposium Awards</td>
<td>Early career scientist support to present at annual meeting symposium on epidemiology and management ($500)</td>
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View full eligibility requirements and submit your application online by January 18, 2016, at www.apsnet.org/members/foundation/apply.

Impressive Donations in 2015

Make a Resolution for 2016

APS members once again provided impressive support to grow the efforts of the Foundation with more than $51,000 in donations in 2015. With 75 individuals receiving more than $45,000 in support this year, your contributions truly have a lasting impact.

For those of you who have given before, THANK YOU! For every dollar you give more than 90% goes directly back to propel plant pathology forward.

For those of you who may not have made a donation yet, make a resolution for 2016, and contribute to the APS Foundation! First time donations are always welcome, any amount has a significant impact.

www.apsnet.org/give.

Important APS Dates to Remember

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<td>January 2016</td>
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<td>Proposals due for the OIP Global Experience program</td>
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<td>18</td>
<td>Applications for several APS Foundation funding opportunities due</td>
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<td>February 2016</td>
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<td>Phytopathology Focus Issue submissions due</td>
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<td>Abstract submission process opens for 2016 APS Annual Meeting</td>
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Recent posts...

- Why I Ran
- How Our Students View Their Graduate Training
- Calling All World Travelers
- Let’s Talk About Careers

Read the latest blog post at www.apsnet.org/members/apsleadership/presblog. Make sure to log in to comment on posts and to sign up for alerts.
Call for Applications for 2016 Storkan-Hanes-McCaslin Foundation Awards

The Storkan-Hanes-McCaslin Foundation Awards are named in honor of Richard C. Storkan, Gerald L. Hanes, and Robert L. McCaslin. Each had a long history of cooperation with the scientific community, and they were pioneers in developing effective soil fumigation through experimental research.

The foundation was established in 1987 to support graduate student research. To date, more than $461,000 has been awarded to 74 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 fares to the APS annual meeting and are presented their awards at a luncheon attended by their research advisors, previous awardees, and members of the Foundation Committee. The 2015 Foundation Award winners were: Ningxiao Li, The Pennsylvania State University; Morgan Gray, University of California, Riverside; and Huang Doan, University of California, Davis.

A major aim of the foundation is to encourage research by offering financial assistance to graduate students who are working on soilborne diseases of plants. The research must be done in the United States, Canada or Mexico. Foundation policy is to contribute to the education of the student. Grants are made on a yearly basis and may be renewed upon review by the committee. Since the award is highly competitive, we encourage unsuccessful applicants to update their proposal for future consideration. The research for which the award is given is expected to be performed by the applicant during the academic year 2015–2016 and a one-page progress report is due one year from the date of the award. It would be appreciated if the foundation were acknowledged in research publications stemming from this award.

To be considered for funding, each proposal should be carefully prepared in accordance with the instructions given below and submitted electronically, no later than May 1, 2016, to: Michael Stanghellini Chair of the Selection Committee, michael.stanghellini@ucr.edu. Please submit:

• a short, two- to three-page research proposal containing a concise statement of the objectives, methods and materials, and projected impact of the proposed research (note: a budget is not required),
• a one-page resume (i.e., a brief education and research background, including a telephone number and e-mail address), and
• a letter from the applicant’s major professor or research director.

Preference will be given to those proposals containing innovative, creative, and/or novel research approaches to the stated objective(s), and to the overall quality (organization, correct English grammar and spelling) of the written proposal. Funding will begin September 1, 2016.

Essential Virology and Viruses of Tropical Crops

EDITOR: J. ALBÉRSIO A. LIMA

LANGUAGE: PORTUGUESE

PUBLISHER: EDIÇÕES UFC, UNIVERSIDADE FEDERAL DO CEARÁ, BRAZIL


This unique book provides a complete review of plant virology in the Portuguese language. The book consists of 15 chapters divided into two parts. The first part describes, in detail, the basic principles of virology, general characteristics of viruses, modes of penetration into cells of healthy plants, transmission from infected to healthy plants, methods for virus diagnosis and characterization, and an overview of disease management approaches. The second part includes symptomatology, etiology, geographic distribution, and management of virus diseases of papaya, cucurbits, cowpea, passion fruit, banana, citrus, and tomato.

Contributing Authors: J. Albersio A. Lima; Aline Kelly Q. Nascimento; M. Fátima B. Gonçalves; Laianny M. Maia; Graziela S. Barbosa; and Fabiana R. Silva

For ordering information, please contact J. Albersio A. Lima at albersio@ufc.br
Student Awards & Degrees

**Andrea Garfinkel**, a Ph.D. student in the Department of Plant Pathology, Washington State University (WSU), was one of the nine recipients of the 2016 Western SARE Graduate Student Competitive Grants Program. The mission of the program is to “foster sustainability through grants that enable cutting-edge research and education to open windows on sustainability across the West.” Garfinkel’s proposal, entitled “Identification of peony diseases in the Pacific Northwest and Alaska,” received $24,979 in funding. Peonies are becoming a major economic force in the state of Alaska, and have also impacted Pacific Northwest farmers, but both cut flower and rootstock producers are in need of knowledge and education about the diseases on their crops to maintain the vitality of this emerging industry. Garfinkel’s project will survey for and identify causal agents of various peony diseases throughout the western region of the United States, as well as in other peony-producing states. The collected information will be used to produce an updated grower’s guide and to hold hands-on grower education training through many of the pre-established networks. She joined **Gary Chastagner**’s lab as a Ph.D. student in 2013. Before she came to WSU, Garfinkel earned her B.S. degree in international study and an M.S. degree in agronomy from the University of Wyoming, where she worked on greenhouse and high tunnel production of sunflowers. She also worked as a plant pathology research assistant assessing the efficacy of chemical fungicides and screening for resistance.

**Rachel Medina**, a plant pathology M.S. student at The Ohio State University, received first place in the M.S. poster competition at the Ohio Agricultural Research and Development Center (OARDC) Annual Research Conference for her submission, “Examining the role of maize root exudates influence on soybean cyst nematode hatching.” Her advisor is **Christopher G. Taylor**, associate professor in the Department of Plant Pathology.

**Wenshuang Xie** was awarded second place in the Post-doctoral Researcher category for his poster, “Evaluation of a MYB transcription factor as a visible marker for transgenic plant production,” and **Therese Miller** was awarded third place in the Research Assistants and Associates category for her poster, “Survey of Ohio soybean cyst nematode virulence.” Xie and Miller are both supervised by **Taylor**.

**Emmanuel Mgonja**, a plant pathology Ph.D. student at The Ohio State University (OSU), was selected as a fellow for the Norman E. Borlaug Leadership Enhancement in Agriculture Program (LEAP) in support of his research, “Molecular analysis of host resistance and pathogenicity of rice blast in East Africa.” Mgonja is studying with **Guo-Liang Wang**, professor in the Department of Plant Pathology. Mgonja is one of several Tanzanian students pursuing graduate study in the United States as part of the USAID-funded Innovative Agricultural Research Initiative (iAGRI), which is administered by OSU’s International Programs in Agriculture. Mgonja holds a B.S. degree in agronomy from Sokoine University of Agriculture in Tanzania and an M.S. degree in international agricultural development from the Tokyo University of Agriculture in Japan.

**Western Early Career Award.** The award is given to an early career professional that has shown noteworthy enthusiasm, performance, and accomplishment during their early extension career (less than 10 years) in program design and delivery. **Mohamed Khan**, North Dakota State University, received the ESP North Central International Service Award. The award is given to a member who has contributed significantly to the development and/or expansion of an extension program in another country or countries through in-state and/or overseas work.

**Pedro Figueroa-López**, a Fulbright scholar and plant pathologist from the Mexican National Institute for Agricultural Research (INIFAP), is visiting the laboratory of **Xianming Chen**, research plant pathologist of USDA-ARS and adjunct professor of the Department of Plant Pathology, Washington State University (WSU) from August 2015 to May 2016. Figueroa-López received his B.S. degree in agronomy from University of Chihuahua and M.S. degree in plant health from the Technologic Institute in Mexico, and Ph.D. degree in plant pathology from the University of Minnesota, USA. He has worked on maize and wheat as a breeder and pathologist. His research focuses on developing disease-resistant cultivars and management of wheat diseases, including stripe rust, leaf rust, and Karnal bunt. During his visit at WSU, he is identifying races and characterizing populations of the stripe rust pathogen in Mexico and evaluating wheat germplasm for resistance to stripe rust.

People continued on page 166
Steve Slack, director of the Ohio Agricultural Research and Development Center (OARDC) and APS treasurer, has been inducted into the NIFA Hall of Fame. Established in 2014, the NIFA Hall of Fame recognizes contributions to NIFA and the land-grant university system as well as activities that “support…our nation’s food, agriculture, natural resource and human sciences enterprise,” according to the institute’s website. Slack was recognized for “advancing agricultural research and extension throughout his more than 40 years of faculty and administrative service,” according to NIFA. Slack joined OARDC in 1999 after serving as chair of the Department of Plant Pathology at Cornell University, where he was also the Henry and Mildred Uihlein Professor of Plant Pathology. Before that, he was a faculty member in the Department of Plant Pathology at the University of Wisconsin-Madison. During his tenure at The Ohio State University, Slack has been in charge of research administration for one of the university’s largest and most comprehensive colleges as well as management of OARDC’s Wooster campus and 10 outlying research stations across the state. Slack is a fellow and past president of APS, an honorary life member and past president of the Potato Association of America, and a fellow of AAAS.

Collaborations

Barry Jacobsen, associate director, Montana Agricultural Experiment Station, Montana State University, and head, Department of Research Centers, Bozeman, MT, visited Washington State University (WSU) on October 5, 2015. His visit was hosted by Hanu Pappu, professor of the WSU Department of Plant Pathology. During his visit, Jacobsen interacted with faculty, post-doctoral associates, and graduate students. He presented an invited seminar entitled “Using Bacillus mycoides isolate J induced resistance in IPM programs.” Jacobsen’s research focuses on the development of disease management strategies and IPM programs for potatoes and sugar beets, biological control with phyllosphere- and rhizosphere-inhabiting organisms, host plant resistance, cultural practices, chemical control, and ecology and epidemiology of plant pathogens and biocontrol organisms.

Juan Moral, a plant disease epidemiologist and Hub-Talent Awardee of the Andalucia Knowledge Agency, funded by the European Union’s 7th Frame Program, arrived at the University of California-Davis/ Kearney Agricultural Research and Extension Center, Parlier, CA, to work on the biological control of aflatoxigenic fungi attacking almonds under the direction of Themis Michailides and Peter Cotty USDA/ARS and University of Arizona, Tucson, AZ.

Moral has also been the recipient of the prestigious Marie Curie Fellowship for three years among the University of California-Davis, the University of Córdoba (Spain), and the Catholic University of the Sacred Heart (Italy). Moral’s Ph.D. research was on the epidemiology and management of anthracnose of olive under the direction of Antonio Trapero-Casas, Department of Agronomy, University of Córdoba, Spain. He has also published on several fungal diseases affecting perennial crops such as olive, pistachio, quince and legume diseases.


Ammar Tiaiba, faculty and head of the Department of Agricultural Sciences at the University of M’sila of Algeria, recently spent one month in the laboratory of Weidong Chen, USDA ARS research plant pathologist and adjunct professor of plant pathology at Washington State University, to participate in research on food legume diseases. Tiaiba’s research interests are in using natural substances as a management strategy in controlling diseases of food legume crops, particularly Ascochyta blights of cool season legumes, in an effort to find alternatives to synthetic chemical fungicides. His trip is sponsored by the University of M’sila of Algeria.

New Position

Andreas Westphal joined the Department of Nematology at the University of California (UC)-Riverside as an assistant cooperative extension specialist and assistant nematologist. He earned his first degrees in agricultural sciences at the University of Göttingen, Germany.
Westphal completed his Ph.D. degree in plant pathology/nematology at UC-Riverside. He held faculty positions at Texas A&M University and Purdue University with assignments in extension plant pathology. He moved back to Germany to work as a nematologist for the Julius Kühn-Institut. Recently, he started his position at the UC Kearney Agricultural Research and Extension Center in Parlier, CA. His program focuses on sustainable management of nematodes impacting fruit, nut, and vine crops.

Retirement

T. Jack Morris, distinguished professor of biological sciences at the University of Nebraska-Lincoln (UNL), retired in August 2015 after joining APS in 1969 as a student member. He completed B.S. and M.S. degrees in plant pathology at McGill University in Canada and a Ph.D. degree in plant pathology at UNL in 1973. He was a faculty member at the University of California (UC)-Berkeley in the Department of Plant Pathology from 1976 to 1990. He then moved to UNL, where he served as director of the School of Biological Sciences from 1990 to 2005. He is a charter member of the American Society of Virology and a fellow of the American Association for the Advancement of Science (1997) and APS (1995). He was honored in 1995 as Nebraska’s Sigma Xi Scientist of the Year, and in 2005, he shared the Ruth Allen Award from APS with A. O. Jackson of UC-Berkeley for outstanding career contributions to research.

During his research career, he developed an internationally recognized program in molecular plant virology that produced many of the research leaders in the field including notable APS and ASV members, such as Bryce W. Falk, Steven A. Lommel, Jim C. Carrington, Bruce C. Kirkpatrick, Bradley I. Hillman, Drake C. Stenger, Herman B. Scholthof, K. Andrew White, and Feng Qu. His research accomplishments include pioneering studies on the molecular biology of small RNA plant viruses with emphasis on members of the Tombusviridae. His lab contributed to fundamental advances on aspects of virus genome organization, virus assembly, replication and virus-host interactions, including the discovery of the first defective interfering RNA in plants. He developed the use of gels for detection of viroids and viral dsRNAs early in his career, later extending these approaches to the application of molecular tools for characterizing and detecting strawberry viruses and plant mycoplasma. Practical applications included the development of engineered virus disease-resistant soybeans and the use of viral vectors to express foreign proteins in plants. He has published over 120 research papers, reviews, and book chapters.

He has been actively involved in classroom teaching throughout his career. He taught Introductory Plant Pathology as well as graduate level Plant Virology at UC-Berkeley and developed the first course in Comparative Virology in the 1980s. He continued to teach Virology at the undergraduate level at UNL every year. He was also instrumental in the development and teaching of high enrollment introductory level Biology and Life Sciences courses until his retirement. He has also vigorously promoted undergraduate science education experiences through several HHMI- and NIH-funded grants focused on engaging undergraduates in biomedical research. He also helped to develop an NSF-funded program to provide training opportunities for faculty to learn about interactive classroom teaching methods. He was recently named a National Academies Education Fellow in Life Sciences for 2010–2011 and he received a College Teaching Award in 2012.

In Memory

J. Walter Hendrix (November 20, 1915 –August 29, 2015), professor emeritus at Washington State University (WSU), passed away on August 29, 2015, at the age of 99. He is survived by his wife of 70 years, Mildred, his two daughters, and his sister Ann Bryant. Hendrix was reared in Asheville, NC. He received his master’s degree from Yale University in 1940, and his Ph.D. degree from the University of Minnesota in 1948. During WWII, he was a professor at the University of Hawaii, where as chair of the Department of Plant Pathology, he taught, researched, and developed various varieties of fruits and vegetables that could be raised in Hawaii if cut off from the mainland due to the war. In 1952, Hendrix moved his family to Pullman, WA, accepting a position in the Department of Plant Pathology, where he remained until his retirement in 1982. He served the department as acting chair from 1958 to 1960.

Hendrix was one of the few scientists in the United States studying stripe rust of wheat and focused research on the epidemiology of the disease, including the origin of inoculums, host range, and the role of grass hosts on epidemics on wheat crops, summer and winter survival of the pathogen, and the effect of environmental factors on disease development, and effect of stripe rust on the host. He pioneered the development of root mist chambers. The root mist chambers were used to understand the effect of stripe rust and other plant pathogens on plant development. These chambers provided visual and actual negative effects (dry weight) on infected plants and these results indicated dramatic reductions from the uninfected controls. His research produced innovative tools, such as precision instruments to measure straw strength and devices to collect rust spores. The knowledge of stripe rust epidemiology and devices are still used by scientists in research and the management of the disease. In addition to stripe rust, Hendrix pioneered work in the influence of air pollutants on the agricultural industry of Washington State and studied stem rust and Septoria of wheat, and head smut of corn. During his career, Hendrix directed over 30 graduate students and developed cooperative research interests with scientists in Brazil and Argentina. Hendrix taught introductory plant pathology for many years. He was regarded by students as an excellent teacher and friend.

In addition to his academic pursuits, Hendrix and his wife hosted the Hawaiian club and their home was a respite from the rigors of academia for students from the islands where they could always count on a warm welcome, a good meal, and stimulating conversation. In retirement, Hendrix pursued his love of gardening and his vegetable gardens were renowned for their abundance and remarkable flavors. His gardening post-retirement was extensive and conducted under sun and lake-reflective light from an acre adjacent to Lake Coeur d’Alene in northern Idaho. He contributed the produce to a local food bank. Hendrix will be missed for his generosity, congeniality, sense of humor, and general good will towards all.
Assistant Professor—Citrus Pathology
University of Florida (UF) has a 12-month, tenure-accruing position that will be 40% research (Florida Agricultural Experiment Station) and 60% extension (Florida Cooperative Extension Service), available in the Southwest Florida Research and Education Center (SWFREC), Institute of Food and Agricultural Sciences (IFAS), at UF. The assignment may change in accordance with the needs of the unit. Duties may include developing an innovative applied research program, a major component of which is designed to comparatively evaluate chemical, biological, and genetic materials, and methods for citrus disease control. Overall program responsibilities should focus on some of the major citrus disease challenges, which presently include huanglongbing, citrus canker, citrus black spot, Citrus tristeza virus, and citrus blight. The appointee will develop a strong extramurally funded research program that leads to peer-reviewed publications, as well as an extramurally funded extension program that coordinates with the statewide citrus extension team, provides in-service training to Florida Cooperative Extension county agents, and develops extension materials for clientele. Tenure will accrue in the Pathology Department. Apply online at http://explore.jobs.ufl.edu/cw/en-us/job/494848 and submit application; cover letter that states applicant’s interest in the position and qualifications relative to the credentials listed above; CV; contact information (including e-mail addresses) for three individuals willing to write letters of recommendation; unofficial transcripts. Please refer to Requisition #494848; Pamela D. Roberts, Chair, Search and Screen Committee, University of Florida, Southwest Florida Research and Education Center, 2685 State Road 29 N, Immokalee, FL 34142. +1.239.658.3430; pdr@ufl.edu. Closing date is December 7, 2015.

Three Assistant Professor Positions
University of Florida (UF), Institute of Food and Agricultural Sciences (IFAS), Tropical Research and Education Center (TREC) has three assistant professor positions available. These are 12-month, tenure-accruing faculty positions with research (Florida Agricultural Experiment Station) and extension (Florida Cooperative Extension Service), available in the Department of Horticultural Sciences, IFAS, UF, and will be located at TREC in Homestead, FL. The incumbents will be members of an interdisciplinary team of new faculty members in plant breeding, genetics, and molecular plant stress physiology at TREC and the Fort Lauderdale Research and Education Center, the Departments of Horticultural Sciences and Plant Pathology in Gainesville, and the Mid-Florida Research and Education Center in Apopka. The incumbents in crop genetics will develop an internationally recognized, extramurally funded research program focusing on breeding and genetics of vegetable and tropical fruit crops, and the incumbent in molecular plant stress physiology will be hired to study the impacts of climate change and sea level rise on south Florida’s agricultural and natural ecosystems. The candidates are expected to be well-versed in plant breeding and genetics, molecular plant biology/physiology, particularly as it relates to biotic and abiotic stresses. Knowledge of plant biochemistry, plant genomics, and bioinformatics is highly desirable. Nominations need to include the complete name and address of the nominee. Individuals wishing to apply should go online to http://explore.jobs.ufl.edu/cw/en-us/job (search by Requisition #494902, #494903, #494906) and submit the required materials. Closing date is December 15, 2015, but will remain open until position is filled.

Researcher Seed Health
Enza Zaden, Seed Pathology Department, specializes in research on seed-borne pathogens threatening seed health. As a researcher, you are an expert on seed-borne pathogen testing and epidemiology. You will do quick diagnostics in the field and lab on plants and seeds, perform epidemiological research, and translate your findings into suitable solutions and advice for healthy seed production and seed health testing. In this process, you seek constant alignment with colleagues, thus making sure your solutions will be easily applicable. Furthermore, you will advise seed production, logistic specialists, and other stakeholders on seed health issues and provide them with relevant knowledge and management tools. You will report to the senior researcher of seed pathology. For more information and to apply online, please visit our website www.enzazaden.com/vacancies. This position is open until filled.

Assistant Cooperative Extension Specialist—Vegetable and Field Crop Pathology
University of California (UC)-Davis, Department of Plant Pathology, seeks applicants for a specialist in cooperative extension (CE) at the assistant rank in vegetable and field crop pathology. This is a full-time, career-track position. The appointee will be a faculty member in the Department of Plant Pathology. The successful candidate will be expected to conduct original problem-solving research on plant diseases to develop information that can be applied to management of diseases of vegetable and field crops in California, and to extend this information to grower stakeholders and other industry professionals. These research and extension activities will be closely coordinated with other disciplinary CE academics with UC Agriculture and Natural Resources (ANR), stakeholders, as well as faculty. The applicant should have a Ph.D. degree in plant pathology or a closely related field. Post-doctoral training is desirable but not required. The successful candidate must have a record that documents productivity in research as evidenced by publications in peer-reviewed journals. Applications should be submitted online at https://recruit.ucdavis.edu and should include a CV, publication list, a statement of research and extension interests and goals, a summary or abstract of the Ph.D. dissertation, copies or links to recent relevant publications, and the names and contact information for three references. Inquiries should be directed to Robert Gilbertson, Search Committee Chair; telephone: +1.530.752.3163; e-mail: rlgilbertson@ucdavis.edu. The position will be open until filled, but to ensure consideration, applications should be received by December 15, 2015. A more detailed job description can be obtained at http://plantpathology.ucdavis.edu.
APS Annual Meeting
July 30–August 3
Tampa, Florida

ABSTRACT SUBMISSIONS FOR PROGRAM
Accepted February 1 – March 15, 2016

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Amara R. Dunn and Christine D. Smart
• Characterization of Streptomycin Resistance in Isolates of Erwinia amylovora in California
Helga Förster, Gayle C. McGhee, George W. Sundin, and James E. Adaskaveg

Plant Disease
• Integrating Experience, Evidence, and Expertise in the Crop Protection Decision Process
Gareth Hughes and Fiona J. Burnett
• Diversity of Foliar Phytophthora Species on Rhododendron in Oregon Nurseries
B. J. Knaus, V. J. Fieland, K. A. Graham, and N. J. Grünewald
• Influence of Harvest Timing, Fungicides, and Beet necrotic yellow vein virus on Sugar Beet Storage
Carl A. Strausbaugh, Oliver Neher, Eugene Rearick, and Imad A. Eujayl

MPMI
• Recent Progress in RXLR Effector Research
Ryan G. Anderson, Devdutta Deb, Kevin Fedkenheuer, and John M. McDowell
• Broadly Conserved Fungal Effector BEC1019 Suppresses Host Cell Death and Enhances Pathogen Virulence in Powdery Mildew of Barley (Hordeum vulgare L.)
Ehren Whigham, Shan Qi, Divya Mistry, Priyanka Surana, Ruo Xu, Gregory Fuerst, Clara Pliego, Laurence V. Bindschedler, Pietro D. Spanu, Julie A. Dickenson, Roger W. Innes, Dan Nettleton, Adam J. Bogdanove, and Roger P. Wise
• Linking Jasmonic Acid Signaling, Root Exudates, and Rhizosphere Microbiomes
Lilia C. Carvalhais, Paul G. Dennis, Dayakar V. Badri, Brendan N. Kidd, Jorge M. Vivanco, and Peer M. Schenk

Plant Health Progress
• Root-knot Control and Yield Response of Corn with Seed Treatment and Granular Nematicides
A. K. Hagan, H. B. Miller, J. Burkett, and K. Burch
• Isolation, Identification, Storage, Pathogenicity Tests, Hosts, and Geographic Range of Fusarium solani f. sp. pisi Causing Fusarium Root Rot of Pea
L. D. Porter, J. S. Pasche, W. Chen, and R. M. Harveson
## Calendar of Events

### APS-Sponsored Events

<table>
<thead>
<tr>
<th>Month</th>
<th>Event Description</th>
<th>Location</th>
<th>URL</th>
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<tbody>
<tr>
<td>February 2016</td>
<td>Southern Division Meeting</td>
<td>Balm, FL</td>
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<td>March 2016</td>
<td>2016 Rust Symposium</td>
<td>Pensacola, FL</td>
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<td>Potomac Division Meeting</td>
<td>Richmond, VA</td>
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<td>June 2016</td>
<td>North Central Division Meeting</td>
<td>Roseville, MN</td>
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<tr>
<td></td>
<td>Pacific Division Meeting</td>
<td>LaConner, WA</td>
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<tr>
<td>July 2016</td>
<td>APS Annual Meeting</td>
<td>Tampa, FL</td>
<td><a href="http://www.apsnet.org/meet">www.apsnet.org/meet</a></td>
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### Other Upcoming Events

#### December 2015

- **5-11** Plant-Parasitic Nematode Identification Workshop. Clemson, SC. [www.clemson.edu/cafs/nematology/short_course.html](http://www.clemson.edu/cafs/nematology/short_course.html)
- **6-8** 2015 National Fusarium Head Blight Forum. St. Louis, MO. [www.scabusa.org/forum15](http://www.scabusa.org/forum15)
- **8-10** Soilborne Oomycete Conference. Hawks Cay, Florida Keys. [http://oomyceteconference.org](http://oomyceteconference.org)

#### March 2016

- **22-25** Plant and Microbe Adaptation to Cold. Seattle, WA. [http://cm.wsu.edu/ehome/pmac](http://cm.wsu.edu/ehome/pmac)
- **30-Apr 2** Genetics of Maize-Microbe Interactions Workshop. College Station, TX. [https://gmdw.tamu.edu](https://gmdw.tamu.edu)

#### June 2016


#### July 2016


#### September 2016