Bowen and Munkvold to Serve on APS Council

APS would like you to welcome our newest council members Kira Bowen, Auburn University (AU), who was elected as incoming vice president and will serve as president for the 2018–2019 term, and Gary Munkvold, Iowa State University (ISU), who will serve as councilor-at-large for the 2016–2019 term. Both officers will begin their terms following the 2016 APS Annual Meeting in Tampa, FL. Thank you to everyone who voted!

Bowen is a professor in AU’s Department of Entomology and Plant Pathology, where she specializes in epidemiology, control of diseases of small grains and peanuts, and aflatoxins in peanuts and corn. Munkvold, a professor in the Department of Plant Pathology and Microbiology at ISU, focuses his research on seed pathology; epidemiology and management of seedling diseases and root rots; and mycotoxin-producing fungi in cereal crops.

Complete biographic sketches, as well as personal statements of leadership, appeared in the May 2016 issue of Phytopathology News (Vol. 50, No. 5). Please join us in welcoming these new members to APS Council at the APS Annual Meeting.

Provide Input to FFAR on Phytobiomes Funding Opportunities in Tampa

The Foundation for Food and Agriculture Research (FFAR) invites you to participate at a convening meeting on the phytobiome on July 29, 2016, in Tampa, FL, immediately preceding the APS Annual Meeting at the Marriott Waterside Hotel. The emerging research area on phytobiomes holds great promise for sustainably enhancing agricultural production. FFAR believes that the surging commercial interest in areas like microbiome-based crop management, increasing demand for community-driven data collection and management strategies, and advances in high-throughput phenotyping technology make the time ripe for investment in a coordinated phytobiome research program. This convening event is an opportunity to provide input to FFAR on the scope, budget, and timeline of a potential FFAR funding opportunity.

Anyone can register for the morning session, which is open to the public. The afternoon session is invite only. Make sure to modify your travel plans and come a day early to the APS Annual Meeting to participate. Full details and registration submission is available at http://foundationfar.org/phytobiome-convening.

APS Journals Make Big Impact in 2015

The Institute for Scientific Information (ISI) just released its 2015 impact factor scores for the world’s major academic journals, including Phytopathology, Plant Disease, and Molecular Plant-Microbe Interactions (MPMI). The journals fared very well, all scoring above the three-point mark:

- **Plant Disease** achieved an impact factor of 3.192, its highest score ever.
- **MPMI**’s impact factor rose significantly in 2015 from 3.944 in 2014 to 4.145.
- **Phytopathology**’s impact factor scored above 3.011 for the second year in a row.

“These new impact factors show that APS is well positioned in an ever more competitive scientific publishing landscape. Our impact is the result the hard work and vision of our outstanding editors-in-chief and editorial boards, as well as a range of strategic measures APS has implemented,” said Nik Grunwald, APS Publications Board chair and APS Council member.

Publish your next manuscript in an APS journal. Visit www.apsjournals.apsnet.org to learn more.

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Plant Pathology’s Perplexing Past—The Rest of the Story

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

Part I: Fire Blight—The First Phytobacterial Disease?

AUTHOR’S NOTE: This is Part I of the first article in a planned series of historically oriented stories documenting little-known events in plant pathology. I am interested in sharing these brief accounts and providing them on a regular basis for Phytopathology News in the format of Paul Harvey’s “The Rest of the Story.” Part II will appear in next month’s issue.

Introduction and Background

It is likely that somewhere in our education and training as plant pathologists, we have all been told that Thomas Jonathan Burrill, a professor of botany at the University of Illinois, was the investigator that furnished the first credible proof with fire blight that plant diseases could be caused by bacteria. That statement and concept is not completely accurate, and in order to understand the whole picture, you must hear the rest of the story.

By the 1870s, plant pathology studies centered on the fungi. The veracity of Anton de Bary’s studies with potato late blight from the 1850s was now universally recognized, proving that fungi could be plant pathogens. Many of the severely damaging diseases of economic importance in crops were caused by fungi that were easily observed—the rusts, smuts, and mildews. Therefore, fungi were easy targets for placing the blame for almost any plant disease. Furthermore, the majority of the plant scientific community, centered in Europe, believed that bacteria were not primary causal agents of plant disease. Instead they insisted that bacteria were merely contaminants and secondary colonists of plant tissues infected by fungi or injured by other causes.

Robert Koch and His Postulates

In the mid-1870s, the German physician Robert Koch demonstrated that anthrax in cattle was caused by bacteria. Previous researchers had compared diseased animals and noted the presence of the anthrax bacterium in their blood; however, Koch was the first to experimentally prove the cause and effect of this relationship. Koch’s major influence on bacteriology was two-fold: 1) improvement of pure culture methodologies; and 2) design of steps necessary to determine the cause of a disease, now known as Koch’s postulates.

Fire Blight

Fire blight is a disease of rosaceous fruit crops, primarily pear, apple, and quince, caused by the bacterial pathogen Erwinia amylovora. It has been historically tied to the United States and is furthermore assumed to be native to North America since it has been observed and recorded in the United States since colonial times. It became problematic to commercial apple and pear production in the 1820s and spread to the west coast of the United States by the 1880s. Burrill began working informally on fire blight in 1873 and the results from his studies were presented largely in informal papers and discussions with the Illinois Horticultural Society in the years 1878–1884. He conducted extensive disease transmission experiments successfully, but at least three different workers have been documented as transmitting fire blight earlier: E. S. Hull in 1870, R. Ragan in 1846, and H. Wendell in 1850.

Fire Blight, continued on page 95

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Make the Trip to Tampa

The 2016 APS Annual Meeting is the place to connect with colleagues from around the world, share ideas and research, and explore new science. There's still time to register and join your plant scientist colleagues for an event you won't want to miss.

Abstracts Now Online
Check out the meeting abstracts that are now available online. Look for content on a specific area of science and find abstracts related to your area of research. Search by keyword and find topics of interest to you that you can learn more about at the meeting.

Engaging Session Formats and Emerging Topics

- **New! POD Talks**: These Pathologist of Distinction (POD) Talks will provide interesting, entertaining, and personal/professional stories that reflect the human side of a career in plant pathology.
- **Idea Cafés**: Meet great minds in plant pathology in an informal setting. More than a dozen topics will cover aspects of teaching, technology, professional advancement, and much more!
- **Hot Topics**: These sessions will focus on emerging issues and the latest happenings in the field.
- **Poster Huddles**: The popular Poster Huddles are back this year. Enhance your scientific content, find solutions to problems, and discover innovative ideas with these intimate, small-group sessions.

New! Connect One on One with Top Employers at the Career Fair

The APS Early Career Professionals Committee is excited to launch the first-ever Annual Meeting Career Fair! Network with employers in the plant pathology field and learn about job opportunities. This event is free for all meeting attendees! Reserve a table at www.apsnet.org/meetings/annual/events/pages/careerfair.aspx

Back by Popular Demand: PhytoViews!

Attend a PhytoViews session to hear a variety of viewpoints on trending topics. Sessions announced are "Biologicals and Biological Control" and "Changing Regulations in the Face of Changing Technology." Check the meeting schedule for dates and times.

Can’t Make It? We’re Live Streaming Select Sessions

If you can’t travel to Tampa, you can still take part and watch a number of sessions that will be streaming live online. Visit www.apsnet.org/meet for up-to-date details on how to join live. We look forward to making the science accessible to our global audience.

Other Phytobacterial Investigators

A number of other contemporary workers were also investigating phytobacterial diseases during this time. F. M. Dräner studied a bacterial disease of sugar cane in Brazil (1869) that is now known as *Xanthomonas axonopodis* pv. *vaccinorum*. He did not produce pure cultures or attempt inoculation but is still credited with observing bacterial cells within diseased tissues.

Edouard E. Prillieux, a professor at the National Institute of Agronomy in Paris, published a report on the rose-red or micrococcus disease in 1879. It consisted of a microscopic study on diseased wheat kernels, where he observed masses of micrococcus-like organisms forming distinct cavities within seeds. Orazio Comes was a teacher of botany at the Royal Agricultural College in Portici, Italy. He published several papers on what he called *Bacterium gummis*, which was widely distributed on numerous crops. Neither Prillieux nor Comes were able to grow their respective organisms in pure culture, achieve disease transmission, or adequately describe the pathogens, so today we are uncertain of the identity of those diseases on which they were working.

As early as 1882, Jan H. Wakker in Holland identified a yellow bacterium from infected hyacinth bulbs, named it *Bacillus hyacinthi* (later re-named *Xanthomonas*) and published his results in 1883, followed by four additional research papers on this disease between 1884 and 1887. These publications were not well recognized at that time, nor remembered today as two were in German, three in Dutch, and one in French. Wakker was the first to utilize the new culture methods to attempt to prove that bacteria caused plant disease, first publishing his results a mere seven years after Koch proved that bacteria caused disease in animals. However, he did not successfully inoculate with pure cultures until 1886. In 1887, another Italian, Luigi Savastano conclusively demonstrated the constant association of bacteria in the stem knots, isolated them in pure culture, and then produced typical galls after introducing into small quantities of the culture into healthy olive shoots. Both Wakker and Savastano independently produced results superior to those of Prilleaux, Comes, and Burrill, but still their results were reported after those of J. C. Arthur. To be continued…
Soybean Images Added to the APS Image Database

More than 250 images from the Compendium of Soybean Diseases and Pests, Fifth Edition have been added to the online APS Image Database. Now this important new resource has nearly 4,500 images covering diseases, pests, and disorders on a range of hosts, from large field crops to finite specialty crops.

APS members can access the APS Image Database for just $49 yearly, and the payment would conveniently be prorated to renew with your membership, meaning that if you are halfway through your membership year when you subscribe, your cost is just $24.50. The APS Image Database is an excellent resource for anyone who gives PowerPoint-based presentations in the classroom and at extension talks and industry meetings. And with just one click, these images can be converted into fact sheets full of peer-reviewed scientific information ready-made for students and grower groups.

A subscription includes unlimited access to high-quality images for educational use, 24/7 accessibility, and our easy-to-use search interface. Visit www.apsnet.org/imageDB to search and view images for free.

NOTE: Subscribers may freely use unlimited images in their PowerPoints from the APS Image Database for educational, non-commercial use. Images may also be used in extension bulletins with certain restrictions. A separate fee and written request for commercial use is required.
In the United States, products derived from biotechnology (i.e., genetically engineered [GE]) are regulated by USDA, EPA, and FDA. Genetic engineering refers to the introduction of, or a change to, DNA, RNA, or proteins to change an organism’s genome (National Academy of Sciences, National Research Council report 2004). USDA APHIS has regulatory oversight over GE products to control or prevent the spread of plant pests that could damage crops, plants, or trees. Traditional GE products have been developed with rDNA using Agrobacterium-mediated or gene gun-mediated nuclear genome transformation methods. As Agrobacterium is a known plant pest, most GE products fell under the scope of APHIS regulations. EPA regulates the sale and distribution of pesticides (both traditional chemistry and plant incorporated protectants) to ensure environmental safety and human health. Finally, FDA regulates the safety of food and feed products, including the review of data used to compare GE food/feed with its conventional comparator. In 1986, the Office of Science and Technology Policy (OSTP) issued the Coordinated Framework for the Regulation of Biotechnology (also known as the “CF”), with the goal of establishing federal regulatory policy to ensure the safety of GE products and to also allow for regulatory flexibility to foster innovation in the biotechnology space. In 1992, OSTP updated the CF and reinforced the principle that federal regulatory oversight should focus on product characteristics and intended uses and not on the process used to develop the product. In other words, if a GE-derived food product is comparable to its conventional comparator, it should not be regulated simply because it was developed through genetic engineering.

Based on the CF, therefore, the technology used to develop a crop variety should be irrelevant. In practice, however, APHIS historically has regulated almost all GE products because most GE products were developed with Agrobacterium and thus posed a plant pest risk. Recently, advancements in GE techniques have led to the development of crop varieties without the use of Agrobacterium, and these have fallen outside the scope of APHIS regulations. With new methodology for gene editing, such as zinc-finger nucleases, CRISPR–Cas9, or TALENS, it is possible to modify the genome in a variety of ways, such as making insertions or deletions in a gene sequence, inserting one or more nucleotides to a gene, or in some cases, inserting a different gene. These newer methods of gene delivery and gene editing do not need DNA sequences from plant pests to engineer genes into host plants. Thus, the issue of whether to regulate on the basis of the process by which GE organisms are produced or the GE products themselves, or perhaps both, has resurfaced. On July 2, 2015, the Executive Office of the President issued a directive to FDA, EPA, and USDA to update the CF to take into consideration a variety of factors, including to 1) develop a long-term regulatory strategy to prepare for future biotechnology products, and 2) commission an independent analysis of potential future biotechnology products.

Earlier this year, APHIS issued a notice of intent to prepare an Environmental Impact Statement and update its regulations on biotechnology (www.regulations.gov/#documentDetail;D=APHIS-2014-0054-0001). Included in this notice is an option which would change the focus of APHIS regulations to the process used to develop the product or crop variety rather than the product. During the 2016 APS Annual Meeting in Tampa, there will be a number of opportunities to discuss the various regulatory options with APHIS officials. For background, we recommend reading the recently released extensive report on GE crops by the National Academy of Sciences, Engineering, and Medicine (www.nap.edu/catalog/23395/genetically-engineered-crops-experiences-and-prospects).

During the 2016 APS Annual Meeting in Tampa, there will be a number of opportunities to discuss the various regulatory options with APHIS officials.

Germinating Spores

Remember the first national APS meeting you ever went to as a graduate student? Remember the feeling of not knowing how to navigate the meeting? How to address professors and their research? Network?

Now imagine being an undergraduate at a national meeting and how overwhelming it can be. You could be the difference in how they experience the meeting. Please join us in our “big brothers big sisters”-like program, Germinating Spores, this August in Tampa.

The program will pair graduate students with a participating undergraduate to help the undergraduate successfully navigate their first scientific conference. Note: Participating undergraduates will not be attached to you at the hip (there will be multiple activities for them), but it will give them a go-to person at the meeting for questions or recommendations. Please help us recruit and retain the best undergraduates to plant pathology by participating in this program. If you are a graduate student and would like to participate and help germinate a spore, e-mail Carolee Bull (ctb14@psu.edu) or Alejandra Huerta (Alejandra.Huerta@colostate.edu).
“O Deep Thought computer,” he said, “the task we have designed you to perform is this. We want you to tell us…,” he paused, “the answer.”

Leadership is many things, and the path to effective leadership is rarely a straight line. Effective leadership requires different approaches, styled to the needs of distinct situations and personalities involved. Over the last three years, we’ve tried to provide some nuggets of wisdom about being a better leader, a guide if you will. Being unrepentant science dorks, we’ve sometimes drawn analogies from pop culture and science fiction. Put it all together, and this was simply inevitable: we present for your amusement and disdain, the Hitchhiker’s Guide to Leadership.

For those of you who aren’t familiar, The Hitchhiker’s Guide to the Galaxy was written by Douglas Adams as a radio screenplay and then adapted into novels as a “trilogy in five parts.” The guide follows the misadventures of Arthur Dent as he encounters a series of aliens with quirky personalities, including Ford Prefect, a researcher/writer for the guidebook, and Zaphod Beeblebrox, the president of the universe. The entire series is rife with quotable quotes, but some are pertinent to those who would become better leaders. So with apologies to Mr. Adams…

“If there’s anything more important than my ego around I want it caught and shot right now.”
—ZAPHOD BEEBLEBROX

There’s a tendency for scientists, because most of us are smart, well-educated individuals, to rely heavily on our own opinions to make decisions. But the thing is, we become much better leaders when we solicit and value the contributions of colleagues and (believe it or not) critics. Check your ego at the door, become a better listener.

“We demand rigidly defined areas of doubt and uncertainty.”
—VROOMFONDEL

Clear communication is the foundation of any relationship and a fundamental facet of leadership. Take the time to prepare what you’ll communicate (clarify your goals), recognize your audience, deliver the message clearly with conviction, confirm that the message is received and understood, and use listener feedback to evaluate the effectiveness of communication and improve your delivery.

“I think we have different value systems.”
—ARTHUR DENT

“Well, mine’s better.”
—FORD PREFEECT

Understanding that others see the world differently is a characteristic of a good leader. γνωθι σεαυτόν isn’t Amoeboid Zingatularian, but Greek, for “know thyself” (you would know this if you had a babel fish). People who know themselves understand who they are, and others, and are able to distinguish their perceptions of another from who that person really is. There are multiple personality tests available that can give you an idea of your working style and how your personality type affects your working style and preferences.

Understanding the personality types of those you lead helps as well.

“A common mistake that people make when trying to design something completely foolproof is to underestimate the ingenuity of fools.”
—DEEP THOUGHT COMPUTER

Things will go wrong. Nearly every time.

Responding to adversity positively is a definite plus in a leader. Keep things in perspective; set a good example by keeping calm. Define the problem without assigning blame and figure out possible solutions. Don’t be afraid to accept help. Resilience is key; when things go wrong it can be very hard to maintain your confidence, but resilience is a skill that can be learned and practiced before the crisis. You can bounce back.

“The answer to the great question… of life, the universe and everything…. is…forty-two.”
—DEEP THOUGHT COMPUTER

“Once you understand what the question is, you’ll actually know what the answer means.”

Hey, it’s as good an answer as any! There just isn’t a single answer to the question of what makes a good leader. The reality is nobody has all the answers, no two people will handle a given situation the same way, and nobody handles every situation perfectly. Becoming a better leader is a process, not a destination. Good leadership is just as much about adapting and learning as a journey through the universe. Keep calm and keep track of your towel, and you’ll do just fine.

“One of the things Ford Prefect had always found hardest to understand about humans was their habit of continually stating and repeating the very very obvious.”

We have enjoyed our work with the Leadership Institute and working to train ourselves and other plant pathologists in “the soft skills” of leadership. Thank you for the opportunity to learn, grow, and share. Special thanks to everyone who helped along the way, especially Michelle Bjerkness, Eric Tedford, Erika Saalau-Rojas, Renee Rioux, and the Leadership Institute committee members and volunteers past and present.

“So long and thanks for all the fish.”
—BILL AND JANNA
Thank You APS Foundation Contributors

MAJOR DONOR RECOGNITION

The following individuals are recognized for their significant contribution to the APS Foundation as determined by lifetime total donations as of May 15, 2016. A comprehensive listing of all APS Foundation contributors since the inception of the foundation is available at www.apsnet.org/members/foundation/contributors.

NOTE: This listing is organized according to the honorary group to which the donor belongs as determined by lifetime total donations. New donors are indicated by *, new club members are indicated by †.
Student Award

Jeff Martin Bullock recently completed requirements for a Ph.D. degree in plant pathology at Washington State University (WSU). His committee consisted of Kenneth Eastwell (chair), Hanu Pappu, Brenda Schroeder, and Paul Matthews (Hopsteiner). Bullock's thesis was entitled "Genetic basis for host response to hop stunt viroid." He received B.S. degrees in chemistry and biology in 1987 and an M.S. degree in biochemistry in 1994 from Western Washington University. During his Ph.D. program at WSU, Bullock was an adjunct faculty in the Department of Chemistry, Central Washington University, teaching chemistry from September 2013 to June 2014, and received second place in the 2013 WSU Global Case Study Competition. He accepted a job as the executive director for STEM Initiative Planning at the North Central Educational Service District, Washington.

Collaboration

Sue Cohen, Center for Regulatory Research, LLC, attended the North American Plant Protection Organization (NAPPO) annual meeting in Huatulco, Oaxaca, Mexico, October 26–29, 2014, and the annual meeting in Memphis, TN, October 26–29, 2015, representing APS. The meeting in Mexico featured a special session on Electronic Phytosanitary Certification from Concepts to Implementation and the meeting in Memphis devoted a special session to Inventions in Pest Risk Management. The annual meeting for 2016 will convene in Montreal, Canada, from October 31 to November 3, 2016. NAPPO’s headquarters has moved from Canada to Raleigh, NC. Stephanie Bloom is now the new executive director of NAPPO. For more information about NAPPO, please visit www.nappo.org.

Awards

Gerald Holmes, director of the Strawberry Center at the California Polytechnic State University in San Luis Obispo, CA, was recently recognized for his "sustainability and agricultural innovation" at the 2016 Annual Strawberry Industry Recognition Dinner in Santa Maria, CA. Holmes is the founding director of the Strawberry Center and began his position in June 2014. The center is a unique partnership between the California Strawberry Commission and California Polytechnic State University established to address the needs of the California strawberry industry through applied research and education.

Hanu Pappu, professor of the Department of Plant Pathology, Washington State University (WSU), is among the seven winners who recently received the WSU’s Fourth Annual International Research Travel Awards (IRTA). When commenting on the awards, Asif Chaudhry, WSU vice president for international programs, said that collaborative research is essential to our success as a university. "This year’s winners illustrate the powerful range of collaborative and interdisciplinary work our researchers are doing on other continents," said Chris Keane, WSU vice president for research. "They show the reach our work can have as we seek to have a positive impact on the state, nation and world." Each awardee received $2,000–$5,000 to promote and strengthen international research collaborations. Full-time WSU faculty members who submitted applications that met IRTA guidelines were eligible for the awards, which are sponsored by the Offices of International Programs and Research. Pappu’s travel award is for developing international collaborations for viral disease control tactics in plants.

Presentation

Graduate students Olga Kozhar, Chiti Agarwal, Yuxian Li, Shannon Carmody, and John Weber of the Department of Plant Pathology, Washington State University, gave a special seminar presenting the results of their class project “Strange case of pointed morel.” Over the course of the 2016 spring semester, the graduate students in the Advanced Fungal Biology class taught by Tobin Peever and Lori Carris worked on phylogenetic analysis of unclassified specimens of morel mushrooms. The specimens, which had been collected in Idaho in previous years, have a distinctly pointed cap and are distinct morphologically from Morchella species already reported in that area. Combined results of morphological and phylogenetic analysis conducted by the students revealed evidence that these unknown specimens are probably a new Morchella species not described previously. Department faculty, staff, post-docs, and other graduate students attended the special seminar. An article based on the research results was featured on the summer 2016 edition of Washington State Magazine (http://magazine.wsu.edu/2016/04/29/morels/).

In Memory

Professor emeritus and renowned scholar Karl Maramorosch was born January 16, 1915, and died of natural causes on May 9, 2016, at the age of 101, while visiting friends in Poland. He was born in Vienna, where his family had fled at the outbreak of World War I to evade the advancing Tsarist Army. After the war, the family returned to their farm in eastern Poland, where Karl attended primary and secondary schools, graduating from the Moniuszko Conservatory of Music in 1934. He considered becoming a concert pianist, but followed his father's footsteps in agriculture and entered Warsaw University, graduating magna cum laude in agricultural engineering in 1938. The same year he married his college sweetheart, Irene Ludwinowska, who was his steadfast companion for the next 70 years. His childhood dream of becoming a virologist was interrupted the following year when the Nazis and subsequently the Soviets invaded Poland. Karl and his young bride escaped across a heavily guarded bridge into Romania disguised as a Polish army major and his wife. Here they were interred in refugee camps for the remainder of the war and where Karl became a skilled shoemaker. His parents, brother, and 127 close relatives perished in the Holocaust.

Eager to escape for a third time, now from Soviet-occupied Romania, Karl obtained a sham transit visa from friends in the Swedish Embassy in Bucharest that took the couple through Czechoslovakia and France to Sweden. Here the American Consul classified Karl as a “skilled agriculturist” entitled to a first preference immigration visa. They arrived in New York City on February 24, 1947. Karl entered Columbia University and received his Ph.D. degree in a mere two years while working as a technician at the Brooklyn Botanical Garden. Upon graduation, he was hired by Rockefeller University (RU) and was finally free to independently pursue his long-deferred scientific interests. Over the next 12 years, Karl was influenced by some of the most famous scientists of the time, particularly at Cold Spring Harbor, where he worked most summers. He spent long hours with Luria, Delbruck, Mayr, McClintock, Hershey, and scores of other luminaries. At RU, he modified the method of Weigl, who had been his
brother’s professor in Poland, to microinject plant-pathogenic viruses and phytoplasmas into leafhopper vectors. This permitted him to obtain the first evidence that some plant pathogens multiply not only in plants but also in invertebrate vectors. He performed experiments definitively demonstrating that the agent causing aster yellows multiplies in its vector.

Karl moved from RU to the Boyce-Thompson Institute (BTI) in 1961, where he made his most important contributions. As program director of virology, he and his coworkers were at the forefront of new and fascinating studies using the electron microscope to detect and characterize viruses and phytoplasmas in cells of diseased plants and insect vectors. In 1974, Karl joined the Waksman Institute at Rutgers University (Rutgers), where he later earned the coveted title Robert L. Starkey Professor of Microbiology. In 1984, he made his final career move when he joined the Entomology Department at Rutgers. Invariably the first to arrive to work, Karl continued to write, edit, lecture, travel, organize international conferences, and mentor over the next three decades, until an injury finally forced him to retire to his daughter Lydia’s home in California. Advancing age did not dim his passion for travel as he demonstrated by visiting Mt. Kilimanjaro on his 98th birthday. When asked the secret for this exceptional vigor, he always responded “never stop working.”

Karl pioneered insect tissue culture, making major advances to our understanding of the replication of plant pathogens in insect vectors and the interactions among insects, viruses, and plants. His research laid a foundation for diverse and increasingly important use of invertebrate-based in vitro expression systems used today in agriculture, medicine, drug discovery, and mammalian cell gene delivery. His early enthusiasm for what was once a small and unrecognized field developed into an important branch of science now demonstrating its enormous potential, including the first cancer vaccine.

Karl was a prolific writer and editor in serving the disciplines of virology, plant pathology, and entomology with uninterrupted distinction across eight decades. He edited more than 90 volumes and authored/coauthored hundreds of journal articles covering his research interests in comparative virology, invertebrate cell culture, parasitology, plant and insect disease, spirochetes, viroids, phytoplasmas, spiroplasmas, and biotechnology.

Recognized throughout his life with awards and accolades, Karl’s proudest moment came in 1980 when he was awarded the $100,000 Wolf Prize, considered agriculture’s equivalent of the Nobel Prize, “for his pioneering and wide-ranging studies on interactions between insects and disease agents in plants.” He was elected to the German National Academy of Sciences and was a Fellow of AAAS, APS, New York Academy of Sciences, Indian Virological Society, Indian National Science Academy, and others. He was an honorary member, fellow, and most significantly designated a “legend” of the Entomological Society of America, which also nominated him for the National Medal of Science.

Karl Maramorosch, eminent virologist, entomologist, and plant pathologist, was a truly remarkable and multifaceted individual. Not only was he a celebrated scientist, but a gifted pianist, amazing sleight of hand magician, a polyglot, world traveler, avid photo and videographer, and owner of a phenomenal memory. Karl was an extraordinary person who lived an extraordinary life. He will be missed by all those whose lives he touched over his long life. Safe travel, Karl.

Obituary prepared by Randy Gaugler, Rutgers University, May 2016. ■

Meeting

Emerging Plant Disease and Global Food Security

The Emerging Plant Disease and Global Food Security Chancellors Faculty Excellence Program cluster at North Carolina State University (NCSU) led by Jean Beagle Ristaino hosted an international symposium March 23–24, 2016, in Raleigh, NC, and brought together experts that study emerging plant diseases and their arthropod vectors.

Ristaino opened the meeting with a discussion of the emerging threats of plant pathogens that impact food security and national security. The invited keynote speaker, Nina Fedoroff, former science and technology advisor to Secretaries of State Condoleezza Rice and Hillary Clinton, discussed food and civilization. Sessions included: Christopher Gilligan, Cambridge University Strategic Initiative in Global Food Security, data on emerging pathogens that threaten global food security; Karen Garrett, the Global Food Systems Institute and the Department of Plant Pathology, University of Florida, understanding plant disease management in the context of food systems; Pamela Anderson, USAID Board on International Food and Agriculture Development, monitoring emerging diseases: the challenges and the need for a 21st century global surveillance system; Michael Martin, Norwegian University of Science and Technology, evolutionary genomics of Phytophthora infestans; David Schmale, Virginia Tech, drone-ing for plant pathogen highways in the sky; and a closing panel was on challenges in tackling emerging diseases in Africa and included Angela Records, USAID, emerging plant diseases and feed the future; Linda Hanley Bowdoin, for Biosciences East Africa- ILRI Hub, role of the Biosciences eastern and central Africa (BecA) Hub in enhancing agricultural productivity in Africa, and Paul Weisenfeld, International Development Group, RTI’s food systems approach to reduce global hunger.

These and other speakers synthesized new developments on emerging plant disease biology and discussed an expanding array of new technologies. A full program and abstracts of the meeting can be found at https://globalfoodsecurity.ncsu.edu. ■
Classifieds

Classified Policy: You can process your job listing at www.apsnet.org/careers/jobcenter. Please note: Your online job listing may be edited by newsletter staff to approximately 200 words for the print listing in Phytopathology News. Fees for posting online are $25 member/$50 nonmember for graduate or post-doc positions and $200 member/$250 nonmember for all other positions. To have your job listing included in Phytopathology News, simply select the option on the online form (there is an additional $55 fee). If you have any questions, contact the APS Placement Coordinator (apsplacement@scisoc.org).

Faculty Position—Plant Pathology and Microbiology
A faculty position in the Department of Plant Pathology and Microbiology, National Taiwan University, is available at the level of assistant professor, associate professor, or professor, beginning February 1, 2017. Areas of interest include mycology, plant bacteriology, and development and application of agricultural microbiology. The successful applicant is expected to contribute to the teaching mission, conduct research, and participate in the departmental service. Applicants should have a Ph.D. degree. For details, please visit the following website: http://homepage.ntu.edu.tw/~ppm/ppm_english. Applications must be received by August 31, 2016 (date is not adjustable).

Plant Pathology Research Scientist
The Vegetable Pathology Program (http://gcrec.ifas.ufl.edu/faculty/dr-gary-vallad/research/) at the Gulf Coast Research and Education Center in Balm, Hillsborough County, FL, is looking for a research plant pathologist-biological scientist III. The candidate will assist with the daily management of a dynamic plant pathology program focused on vegetable and other horticultural crops. Candidate will design, conduct, and supervise experiments on the biology and control of pertinent plant diseases in the laboratory, field, and/or greenhouse. Candidate should have experience in the isolation, identification, and storage of plant pathogens, including knowledge of routine immunological and molecular biology techniques used to characterize plant pathogens. A background or experience with the production of vegetable or other horticultural crops is ideal, especially experience with the conduct and evaluation of materials for pesticidal activity. A master’s or Ph.D. degree (foreign equivalent acceptable) in plant pathology or a closely related discipline is required. Candidates with research and extension experience relative to this position are highly desirable. Candidates should possess demonstrated skills in verbal and written communication, working cooperatively with others, and computer skills. Individuals wishing to apply should go online to http://explore.jobs.ufl.edu/cw/en-us/job/497388 and submit application; cover letter that states applicant’s interest in the position and qualifications relative to the credentials listed above; CV; names and contact information (e-mail address and phone number) of three individuals who will provide letters of recommendation; non-official copy of transcripts (refer to requisition #497388). Contact: Gary E. Vallad, associate center director and associate professor of plant pathology, University of Florida, Gulf Coast Research and Education Center 14625 CR 672 Wimauma, FL 33598 U.S.A.; phone: +1.813.634.0000; e-mail: gavallad@ufl.edu. Applications must be received by July 15, 2016.

National Program Leader for Specialty Crops (Two Positions)
The USDA ARS Office of National Programs, Crop Production and Protection in Beltsville, MD, is seeking two permanent, full-time national program leaders for specialty crops with a background in the fields of horticulture, plant pathology, entomology, and related plant sciences, such as fields in plant physiology and genetics, and encompassing cropping efficiency, productivity, quality, marketability, and protection of annual, perennial, greenhouse, and nursery crops. The national program leader provides leadership and direction for national and regional research programs related to development, protection, and production of specialty crops, such as fruits and vegetables, tree nuts, and horticulture and nursery crops, including floriculture. Key characteristics of a successful national program leader include having excellent scientific credentials from a personal research program, having a broad vision for research, being a team player as both leader and member, and having excellent people and communication skills. For program information, contact Maureen Whalen (+1.301.504.6252; e-mail: Maureen.whalen@ars.usda.gov). Program information available at www.ars.usda.gov/research/programs. Recruitment is at the GS-15 level ($128,082–$160,300.00 per annum). To obtain specific qualification requirements, please visit www.usajobs.gov and search for ARS-S16N-0040. USDA/ARS is an equal opportunity employer and provider. The closing date for this position is July 10, 2016.

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Rhizosphere Competence of Wild-Type and Genetically Engineered Pseudomonas brassicae Is Affected by the Crop Species
Stacey Blouin Bankhead, Linda S. Thomashow, and David M. Weller

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Phytopathology
## Calendar of Events

### APS-Sponsored Events

**JULY 2016**
- **30-Aug 3**  **APS Annual Meeting.** Tampa, FL. www.apsnet.org/meet

**OCTOBER 2016**
- **19-21**  **Northeastern Division Meeting.** Ithaca, NY. www.apsnet.org/members/divisions/south

**FEBRUARY 2017**
- **18-20**  **Southern Division Meeting.** College Station, TX. www.apsnet.org/members/divisions/south
- **26-Mar 2**  **Caribbean Division Meeting.** San Jose, Costa Rica. www.apsnet.org/members/divisions/carib

**MARCH 2017**
- **22-24**  **Potomac Division Meeting.** Morgantown, WV. www.apsnet.org/members/divisions/pot

**JUNE 2017**
- **14-16**  **North Central Division Meeting.** Champaign, IL. www.apsnet.org/members/divisions/nc

### Important APS Dates to Remember

#### JULY 2016
- 1  Art in Phytopathology submissions due

### Other Upcoming Events

#### JULY 2016
- **9-13**  **Plant Biology 2016.** Austin, TX. http://plantbiology.aspb.org
- **17-21**  **XVII International Congress on Molecular Plant-Microbe Interactions.** Portland, OR. www.ismpmi.org/congress/2016
- **24-27**  **Sixth International Biofumigation Symposium.** Stellenbosch, South Africa. http://biofumigation2016.co.za
- **25-27**  **38th New Phytologist Symposium: Colonization of the Terrestrial Environment.** Bristol, United Kingdom. https://newphytologist.org/symposia/38

#### FEBRUARY 2016
- **27-Mar. 1**  **Caribbean Division Meeting.** San Jose, Costa Rica. www.apsnet.org/members/divisions/carib

#### SEPTEMBER 2016

#### OCTOBER 2016
- **23-28**  **XVII International Botrytis Symposium.** Santa Cruz, Colchagua Valley, Chile. http://w.xvii.botrytisymposium.agronomia.uchile.cl

#### NOVEMBER 2016
- **1-2**  **Tomato Disease Workshop.** Hendersonville, NC. www.ncsu.edu/mckimmon/cpe/opa/tdw
- **2-3**  **Achieving Durable Resistance to Wheat Diseases and Pests 2016.** Bloomington, MN. www.ag.ndsu.edu/wheatresistance
- **8-12**  **Phytobiomes: From Microbes to Plant Ecosystems.** Santa Fe, NM. http://keystonesymposia.org