

# SPOREPRINTS

Department of Plant Pathology & Environmental Microbiology

SEPTEMBER 2013

THE PENNSYLVANIA STATE UNIVERSITY

## CONGRATULATIONS

### 50 Years of Plant Pathology!!

#### Exhibit Celebrates 50 Years of Plant Pathology

An exhibit, created by the Department titled, "Healthy Plants for a Healthy World: 50 Years of Plant Pathology at Penn State," was on display for the general public in The Eberly Family Special Collections Library, 104 Paterno Library, on the Penn State University Park campus, from June 5 through Sept 17, 2013.



The exhibit grand opening and a celebration of the 50th anniversary of the Department were held on June 7, in Foster Auditorium, Paterno Library, followed by a reception next door in the Mann Assembly Room. Presentations featured comments by Dr. George Abawi, Professor of Plant Pathology from Cornell University and President-Elect of the American Phytopathological Society (APS); Dr. Barbara Christ, Interim Dean of the College of Agricultural Sciences and faculty member and former Head of the Department; and Dr. Frederick Gildow, current Department Head. Many current and retired professors attended as did many current faculty, students and staff members.

Several special events related to the anniversary were held during the summer. On June 15, Gary Moorman told "The Penn State Elm Story." On June 29, Beth Gugino discussed "Phytophthora, the Plant Pathogen That Won't Go Away." On July 20, John Pecchia described "Mushroom Production: From Art to Science." The final presentation to the general public was on August 24, "Plants Get Sick, Too!" during which Fred Gildow shared how members of the Department and the Pennsylvania Department of Agriculture worked together to successfully eliminate plum pox virus from the Commonwealth. Several tours of plant diseases on campus were conducted for the general public and were led by Sara May, Emily Pfeufer, Doug Whalen, Gretchen Kuldau, Grace O'Keefe, Brian Aynardi, and Gary Moorman. The graduate students put together an outstanding video of interviews with students who described their experiences in the Department. Prominently featured in the video that ran continuously during the exhibit were Emily Pfeufer, Steve Conaway, Brian Aynardi, Sarah Bardsley, and Emmie Warnstrom. In addition to those mentioned above, a great deal of work was done by others in the Department to put together the numerous displays in the Library, including Herb Cole, Don Davis, Ilse Huerta, Kim Paley, Becky Peplinski, Judy Sinn, Nancy Wenner, and Diane Yoder. Gary Moorman chaired the display committee.

Special thanks also goes to Jackie Esposito, University Archivist, and her colleagues who took all the materials we provided, found even more items of interest, and organized them into an outstanding display.

#### David Carroll, President of Giorgi Mushroom Company

2013 Outstanding Alumnus of the College of Agricultural Sciences

For the third year in a row, the Department of Plant Pathology Environmental Microbiology has had an alumnus selected as an Outstanding Alumnus of the College of Agricultural Sciences. David Carroll, President of Giorgi Mushroom Company (and several other companies) is this year's awardee. Dave earned his M.S. degree in Plant Pathology in 1973 working with Dr. Lee Schisler. Mr. Carroll is recognized as an international leader in the business of mushroom production. This award adds further evidence of the quality of the Plant Pathology degree programs in our Department.

The award ceremony will occur in October when Mr. Carroll will visit the Department. More info regarding this award will follow in coming months. Mr. Carroll will be visiting the PPATH department October 21 & 22.

## CONGRATULATIONS (CONT'D)

- The American Phytopathological Society (APS) recently announced the **2013 APS Awards** recognized at this year's national meeting in Austin, TX. The two Penn State Faculty in Plant Pathology and Environmental Microbiology that were recognized this year are **Dr. Seogchan Kang** and **Dr. Fred Gildow**. **Dr. Kang was awarded The Ruth Allen Award** honoring individuals who have made an outstanding research contribution that has changed, or has the potential to change, the direction of research in plant pathology. Dr. Kang was honored for his innovative efforts, done in collaboration with Dr. Yong-Hwan Lee at Seoul national University, to develop and deploy bioinformatic platforms for pathogen identification and characterization. **Dr. Gildow was awarded the APS Fellow Award**. The Fellow Award is given to current APS members in recognition of distinguished contributions to plant pathology during their career. APS Fellow recognition is based on significant contributions in original research, teaching, administration, and outreach. Dr. Gildow, current Head of the Department of Plant Pathology and Environmental Microbiology, is known for his pioneering studies of cellular and molecular mechanisms regulating vector-specificity of plant virus transmission and his over 30 years of teaching introductory courses in plant pathology.
- Kristi Fensternacher** was presented the **Storkan-Hanes-McCaslin Foundation** award at the APS Meeting in August. The award is for the study of population dynamics of soilborne *Fusaria*. The Foundation is named to honor Richard C. Sorkan, Gerald L. Hanes and Robert L. McCaslin – three pioneers in soil fumigation research – and aims to assist graduate studies of soil borne pathogens. Awards were presented to the winner at a luncheon attended by their research advisors, previous awardees and members of the Foundation Committee. In addition to Kristi's APS award, she received a **NIFA (National Institute of Food and Agriculture)** fellowship award. This fellowship award has approved funding of \$79,000 over a two year period for Kristi.
- Sarah Bardsley** and **Emily Pfeufer** were two of five students selected through a competitive application process to present as part of the 13<sup>th</sup> I.E. Melhus Graduate Student Symposium titled "What's in Our Toolbox to Minimize the Risk of Plant Disease?" at the APS Meeting in August. Emily's seminar presentation was titled "Environmental and management factors associated with bacterial rots of onion in Pennsylvania" and Sarah's was titled "Factors affecting the timing of abscission of peach and nectarine leaves infected with *Xanthomonas arboricola* pv. *pruni*." In addition, each received a travel award to help defray costs of attending the meeting.
- Recent PPATH Graduates....**
  - Dr. Maria L. Burgos-Garay** (Ph.D. Plant Pathology; advisor Dr. Gary Moorman) "Effect of heterotrophic bacterial communities on *Pythium* spp. in recycled irrigation water" Maria is doing a 1 year postdoc with Gary in order to continue some of the research and prepare papers for publication.
  - Dr. Emily Hellwell** (Ph.D. Plant Pathology; advisor Dr. Yinong Yang) "The role of ethylene biosynthesis and signalling in resistance to fungal diseases in rice" Emily is doing a postdoc with Dr. Mark Guiltinan in Dept. of Plant Science and Dr. Brett Tyler at Oregon State. She will be leaving for Oregon in Feb 2014.
  - Emmie Warnstrom** (M.S. Plant Pathology; advisor Dr. Don Davis) "Reuse of spent mushroom compost for production of *Agaricus bisporus*. Emmie is currently a Biologist Consultant at amFOG Mushroom Farms.
  - Dr. Yinfei Li** (Ph.D. Plant Pathology; advisors Drs. Wakar Uddin and John Kaminski) "Factors influencing the development of gray leaf spot of perennial ryegrass turf and seasonal availability of the inoculum" Yinfei is currently resides in Germany with her new husband Marcus Ludwig.
  - Dr. Venkatesh Moktali** (Ph.D. Bioinformatics & Genomics; Dr. Seogchan Kang) "A comparative genomic investigation of niche adaptation in fungi" Venki is currently a Faculty Research Assistant at UC Riverside and is being co-advised by Drs. Jason Stajich (UC Riverside), Brett Tyler (Oregon State) and David Roos (UPenn).
  - Dr. Wenhua Liu** (Ph.D. Plant Biology; advisor Dr. Yinong Yang) "Characterization of pathogen effectors and host endogenous peptide elicitors in the rice - *Magnaporthe oryzae* interaction" Wenhua returned to Guangzhou (Canton), China to work in South China Agricultural University.
  - Dr. Bongsoo Park** (Ph.D. Bioinformatics & Genomics; advisor Dr. Seogchan Kang) "Cyber-infrastructure supporting fungal and oomycete phylogenetics and genomics" Bongsoo Is currently working as a Research Associate with Dr. Frank Pugh in the Dept. of Biochemistry and Molecular Biology at Penn State.

## CONGRATULATIONS (CONT'D)

- **Pete Romaine, Carl Schlaginhaufen, and Ben Woolston**, a former undergraduate honors student, received an Inventor Incentive Award when their invention, "Novel Strategies for the Transgenic Manipulation of Filamentous Fungi" was selected for patent application with the U.S. Patent and Trademark Office by The Penn State Research Foundation.

## WELCOME...

### New students for Fall 2013:

- **Anita Behari** (Ph.D. – Kuldau), **Rob Harvey** (Ph.D. – Davis/Pecchia), **Tobias Tucker** (M.S. - Beyer), **Sara Atyeo** (Ph.D. – McNellis), **Christopher Smyth** (Ph.D.-Geiser), **Carla Lanze** (M.S. – Moorman), **Gary Nolan** (Ph.D. - Uddin)

### Temporary Staff Assistant:

- **Chardonai Johnson** is assisting with various tasks and projects for the administrative area. When you stop in to pick-up your packages in 211 – be sure to say “Hi”. Although she’ll be utilizing her skills/talents for our Department temporarily – she is seeking a position in Journalism and English for which she has recently earned a degree from Penn State.

## NOTEWORTHY NEWS...

- **Dr. Fred Gildow announced his upcoming retirement** from his position as Professor and Department Head. A search committee has been formed and is in the process of seeking a dynamic individual to provide leadership and vision as the Department Head.
- **Environmental Microbiology Symposium** will be held **September 28<sup>th</sup>** in 100 Thomas Building from 8am – 5pm. Sponsored by the Dept. of Plant Pathology and Environmental Microbiology, as part of the celebration of 50 years of Plant Pathology at Penn State. The symposium is being coordinated by Marilyn Roossinck and the planning committee. Mark your calendar to attend!
- **Ningxiao Li and Bastian Minkenberg** are participating the in Planting Science Team for outreach activities. They will assist middle and high school students from the U.S. via an online forum to plan, execute and analyze simple plant biology experiments. The Education Committee of the American Society of Plant Biologist recognizes their efforts with a free one-year membership and 50% off registration for the 2014 Plant Biology meeting. Ningxiao works with Dr. Seogchan Kang and Bastian works with Dr. Yinong Yang.
- This past August, Vasileios Bitas published a review paper in MPMI: **Bitas, V., Kim, H.S., Bennett, J.W, and Kang, S. (2013) “Sniffing on Microbes: Diverse Roles of Microbial Volatile Organic Compounds in Plant Health”**; **Mol. Plant-Microbe Interact.** 26 (8):835-843. Check it out at <http://apsjournals.apsnet.org/toc/mpmi/26/8>.

- **Mushroom Research Center (MRC) composting renovations almost complete!**

Since the closure of the MTDF in 2011, compost production for mushroom experiments at the MRC has continued in the Phase I bunkers at the MTDF. The original plans were to move all operations to the MRC as soon as a new, smaller, bunker and tunnel could be designed and constructed at the MRC. We are almost there! Construction of a new Phase I bunker and Phase II tunnel started this summer and should be completed by the end of October. Upon completion of the new composting units all aspects of the mushroom research program will be carried out entirely at the MRC using the new Phase I bunker and Phase II tunnel.



- **Dr. John Pecchia** will be the instructor for the new special topics course **Mushroom Cultivation (PPEM297A)** for **spring 2014**. Learn how to grow a variety of mushrooms, discuss nutritional requirements and environmental conditions necessary for the production of mushrooms. Checkout the posters announcing the class! Labs will be hands-on and held at the MRC building.

## NOTEWORTHY NEWS (CON'T)

- Dr. Matt Kasson, along with Dr. Don Davis, have been working on *Fusarium* associated with ambrosia beetles in the genus *Euwallacea*. Their research was facilitated by the discovery of infestations of the ambrosia beetle *Euwallacea validus* within dying stands of the invasive *Ailanthus altissima* (tree-of-heaven) killed by *Verticillium* wilt in Pennsylvania. These beetle symbionts are unusual in that some are plant pathogens that cause significant damage in naïve natural and cultivated ecosystems, and currently threaten avocado production in the U.S., Israel and Australia. In a four-locus phylogenetic analysis, all the beetle-associated *Fusaria* resolved in a strongly supported monophyletic group within the previously described Clade 3 of the *Fusarium solani* species complex (FSSC). Also, unlike other FSSC members, this group of *Fusarium* from beetles produce unusual clavate macroconidia that serve as a putative food source for their insect mutualists. Lastly, and perhaps most importantly, the phylogenetic analysis revealed at least three interspecific hybridization events between several of the individual *Fusarium* lineages, which may result in increased virulence and/or expanded host ranges for these new hybrids and may pose additional risks to both avocado production and forest health. Matt was also interviewed for Southern California Public Radio show concerning this research (<http://www.scpr.org/programs/take-two/2013/07/25/32886/could-a-beetle-cause-a-world-without-avocados/> ).
- Vasileios Bitas (Ph. D. student with Seogchan Kang) as witnessed by Gary Moorman, caught a 60 cm. (~24 in.) long brown trout while fly fishing in the Little Juniata River! ('I thought this was supposed to be tough.'... he says).
- **Reminders....**
  - Experimental Station Accomplishment and Termination reports are due to Lori Long, by September 30<sup>th</sup>
  - Child Sex Abuse Training – to be completed for 2013 and must be completed yearly
  - Any items that are newsworthy – Department-related (faculty/staff/student) events, awards, publications , trips...please send to Lori for inclusion on the website and in SPOREPRINTS. Photos from these events are appreciated, whenever possible.

## UPCOMING EVENTS...

- Sept. 23 – Seminar Speaker – Anne Pringle, Ph.D. – Harvard University
- Sept. 25 – Faculty Meeting – 208A – 9am – 11am
- Sept. 26 – Staff Meeting – 208A – 1pm – 2:30pm
- Sept. 28 – Environmental Microbiology Symposium – 100 Thomas Bldg. – 8am – 5pm
- Sept. 30 – Seminar Speaker – Yinong Yang, Ph.D. – Penn State
- Oct. 6-8 – 55<sup>th</sup> Annual Mushroom Short Course – Kennett Square, PA
- Oct. 7 – Seminar Speaker – Steve Harris, Ph.D. – Nebraska University
- Oct. 14 – Seminar Speaker – Marcia Buenafina – Penn State
- Oct. 16 – Faculty Meeting – 208A – 9am -11am
- Oct. 17 – Staff Meeting – 208A – 1pm-2:30pm
- Oct. 21-22 – David Carroll, President - Giorgi Mushroom Co – 2013 Outstanding Alumni Award Recipient, CAS
- Oct. 21 – Seminar Speaker – Ali Demirci, Ph.D. – Penn State
- Oct. 28 – Seminar Speaker – Katharine Stevenson, Ph.D. – University of Georgia

## Name this Disease and Casual Agent...

If you are interested in competing, send both the common name of this disease and its causal agent to Sandy in an e-mail with "SporePrints Contest" on the subject line. Only contestants who submit entries with both answers correct will be considered winners.

Winners will be determined and their names posted on the Mailroom bulletin board one week after SporePrints is distributed. At the Dept. Award Ceremony (winter 2013), the individual with the most wins, will receive recognition and a travel award. **The host pictured is cauliflower but this pathogen has a wide host range.**

