The word is out about the value of our Plant Pathology undergraduate degree and the number of students enrolling in the program is on the rise. Associate Professor and lead undergraduate faculty advisor Jeri Barak feels it is simply a case of getting the word out to both students and parents about the unique opportunities available to UW-Madison Plant Pathology majors. “We sell the small major as a benefit to students, since they have more personal access to faculty. For example, a Plant Pathology major helps pre-med students stand out from the crowded field of biology majors,” says Barak. “We also emphasize research opportunities, both field and bench, with Plant Pathology faculty.”

Once the word gets out about the positive aspects of majoring in Plant Pathology, the growth of the major begins to snowball. “Our majors often feel very passionate about the field and are our best advocates when we go and talk to students and parents,” says Student Services Coordinator Sara Rodock. The enrollment figures support Rodock’s perception. According to figures tabulated by Tableau Software, Inc.' the number of students enrolled in Plant Pathology has risen from 6 in 2008 to 27 in 2014. The number of degrees granted is also on the rise from 1 to 8 in the same time period. At events such as major fairs Rodock notes that she does very little talking with students who stop to visit. “I let the current students talk about their amazing research projects, classes they have enjoyed, and other opportunities that they have had through the

Enrollment continues on page 2

Enrollment continued from page 1 department, such as scholarships, First-Year Interest Groups (FIGs), conferences, etc.,” says Rodock.

Graduating students comment in their exit interviews that our department has a community feel which makes faculty and staff more approachable. They note that the instructors seem to really enjoy teaching and students appreciate the many opportunities to both take courses with a lab component and to work in labs. Perhaps the best endorsement comes from a student who noted s/he learned a lot while also finding the courses fun and interesting.

Plant Pathology majors can choose between two tracks — Plant-Microbe Biology Track and Plant Health and Industry Track. The first track emphasizes basic biological sciences and is often attractive to persons interested in pre-health careers, research careers, and graduate school. The Plant Health and Industry Track focuses more on agriculture with less emphasis on basic biology. Students in this track are often interested in careers related to large and small agricultural industries, community supported agriculture, the farm-to-table movement, and agroecology, explains Rodock. Currently, students are split fairly evenly between the two tracks.

Students who graduate with a Plant Pathology degree leave the UW-Madison with diverse plans post-graduation. These include attending graduate school, obtaining an internship, joining Americorp, attending pharmacy or med school, and obtaining a position in private industry.

What does the future of the Plant Pathology major look like? Current student recruitment strategies seem to be working well so the department has no plans to make major changes to its undergraduate recruitment. Instead, it expects continued growth and interest in the degree. “I don’t think we need to worry about getting too big until we are big,” says Barak. At that point the department may need to be more selective about the students it accepts. “I think our undergrad major is crucial to our survival as a department and our discipline in general. These are the folks who will be tasked with solving a looming food crisis,” says Barak.
Greetings Alumni and Friends, 

The Pathogen has been dormant for a few years, but with this issue it is once again being disseminated far and wide! In the very first Pathogen, published in 1918, our department founder L.R. Jones wrote, “The Department sends hearty greetings to you all, to those of you who have been so long absent that we only know of you by your publications, as well as those who left so recently that your pet organisms are still growing in our incubators.” A timeless greeting upon which I simply cannot improve!

If I had to describe the content of this issue of The Pathogen in a word, it might be “youth” or perhaps “future,” because we highlight the activities of undergraduates, graduate students, and our newest faculty. The Plant Pathology undergraduate major has enjoyed an exciting renaissance; our graduate students continue to shine in research but also are making a mark locally and nationally with their innovative outreach activities; and six assistant professors are providing new blood to invigorate our department.

I would be lying, however, if I claimed that all is well at UW-Madison these days. In fact, we are facing historic budget cuts that come after many years of eroding state support. Fortunately, we have long been blessed with generous endowments from department members and friends past and present.

Chair Notes continues on page 5

Graduate students expand outreach efforts

by Katelyn Horgan

Plant pathology graduate students have initiated several endeavors to expand plant pathology outreach in exciting and creative ways. A group of musically minded students and staff have come together to form The de-Bary-Tones – our very own Plant Pathology band. After debuting with live performances at department events and regional and national American Phytopathological Society (APS) meetings, the group secured a joint grant from the APS Foundation and the Office of Public Relations & Outreach and received funds to record their album Faster than the Speed of Blight for use in outreach and education. The album includes hits such as Quarantine, House of the Rising Oospore, and Born to Run Gels and will be available through the APS website. Band members include: Adam Bayless, Kevin Cope, Ana Cristina Fulladolsa Palma, Victoria Kartanos, Marian Lund, Robyn Roberts, Dave Schreiner, Joe Spraker, and Sean Toporek. (Past members are Erica Arcibal, Anders Gurd, and Kate Myers). Plant Pathology graduate students have also developed an outstanding outreach program called What’s eating my plants? inspired by students Alejandra Huerta, José Pablo Dundore-Arias, and Ana Christina Fulladolsa Palma. This group of students travels to elementary, middle, and high school events bringing plant pathology fun and education to Madison area students and families. Sick plants, microscopes, and interactive activities are used to introduce children to concepts of plant pathology and inspire future generations of plant pathologists! In 2014, the group received the APS Don and Judy Mathre Education Endowment Award. Students are using funds from this award to purchase a banner and materials for outreach activities.

Below, the de-Bary-Tones perform at the 2014 North Central Division APS meeting in Madison. Musicians are Robyn Roberts and Victoria Kartanos on flute, Joe Spraker on bass, Adam Bayless on violin, Ana Christina Fulladolsa Palma on vocals, Kate Myers on guitar, and Anders Gurd on drums.
Meet our new faculty members

The Plant Pathology Department has been fortunate to attract six new faculty members in the past five years. Below we introduce them and their diverse talents.

**Aurélie Rakotondrafara**
Aurélie joined the department in June of 2011. After receiving a Bachelor’s degree in Microbiology-Biotechnology at the University of Madagascar, she earned her Master’s and PhD degrees in Plant Pathology at Iowa State University in Ames. Just prior to joining the Plant Pathology Department at UW-Madison, Aurélie held a post-doctoral position in Heidelberg, Germany, working with Matthias Hentze, one of the icons in the field of gene expression regulation mechanisms. Aurélie’s current research focuses on plant virology — viral translation control, viral replication, and plant virus resistance. Innovative research working specifically with Triticum mosaic virus earned her the WARF Innovation Award in 2014. She hopes this research will lead to new and improved biofuel crops and chemicals.

**Damon Smith**
Damon joined the department in September of 2012. His college education began at State University of New York College at Geneseo where he earned a Bachelor’s degree in Biology. He continued his education at North Carolina State University where he earned his Master’s and PhD degrees in Plant Pathology. Prior to coming to UW-Madison he was horticultural crops extension pathologist at Oklahoma State University. Damon’s current research focuses on diseases of soybeans, field corn, and wheat. Specific research focuses on developing new methods to manage white mold, including the development of improved disease resistant soybean varieties and developing a viable disease forecasting system for white mold. Another branch of his research studies soybean vein necrosis disease and its impact on soybean yield and quality. His research on field corn and wheat has focused on sustainably managing important diseases of those commodities.

**Mehdi Kabbage**
Mehdi joined the department in March 2013. After earning the equivalent of a Bachelor’s degree in Engineering in Toulouse, France, he earned Master’s and PhD degrees in Plant Pathology at Kansas State University. He then took a post-doctoral research position at the Institute for Plant Genomics and Biotechnology at Texas A&M University that led to an associate research scientist position at Texas A&M. Mehdi is a mycologist with an interest in plant necrotrophic fungal interactions. His overall research goal is to generate a complete description of necrotrophic fungal pathogenesis that will lead to suitable control strategies. Since necrotrophic pathogens require dead host cells for nutrient acquisition and the control and execution of cell death is crucial to the outcome of these plant-fungal interactions, Medhi is focusing on how cell death pathways are modulated in response to fungal necrotrophic challenge. He is also interested in identifying the mechanistic details of plant programmed cell death in the context of stress tolerance and disease resistance.

**Paul Koch**
Paul joined the department in January 2014. He completed his undergraduate degree in Horticulture and Soil Science at UW-Madison with a focus on turfgrass management. Following completion of his Master’s degree in Plant Pathology at UW-Madison, he took over management of the UW-Madison Turfgrass Diagnostic Lab, diagnosing over 200 turfgrass samples annually for

New Faculty continues on page 5
Chair Notes, continued from page 3
These gifts improve our resiliency in lean times and provide opportunities for our students, staff, and faculty that can only be envied by many of our peer departments.

If you like what you see in this issue of The Pathogen, I invite you to visit our Facebook page and our department website (plantpath.wisc.edu) for regular updates on who we are, what we are doing, and how we are shaping the field of plant pathology.

On Wisconsin!

News from emeritus faculty
Tom German has a small research program investigating the dynamics of Tospovirus transmission by their thrips vectors, works with colleagues on a recently identified Tospovirus affecting soybeans, and weighs in on various other virus problems when asked. Craig Grau and his spouse Leslee have a small farm in southwestern Wisconsin where they grow vegetables for their own needs as well as sell produce to a local grocery store and two small restaurants. Craig also works part time for Monsanto’s soybean pathology group. Paul Williams and his wife Coe remain active in retirement. Paul serves on the Board of Olbrich Botanical Society and continues to contribute to the Plant Pathology Department’s Fast Plants Program and Rapid Cycling Brassica Collection.

New Faculty, continued from page 4
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Doug Maxwell reports that he and wife Martha have started a new phase in their lives. They are now coordinators of the Badger Prairie Food Pantry in Verona, WI. Doug is also a supervisor on the board for the Town of Verona and still finds time to do molecular marker design for marker-assisted breeding projects. Paul Williams and his wife Coe remain active in retirement. Paul serves on the Board of Olbrich Botanical Society and continues to contribute to the Plant Pathology Department’s Fast Plants Program and Rapid Cycling Brassica Collection.

Erin Silva
Erin joined the Plant Pathology faculty in July 2014. She began her academic studies at UW-Stevens Point where she earned her undergraduate degree in Biology. She then earned her Master’s degree at Washington State University followed by a PhD in horticulture with a focus on vegetable physiology. Following a post-doctoral position with Phil Simon through the USDA Vegetable Crops Research Unit at the UW-Madison, Erin took a faculty position at New Mexico State University before returning to UW-Madison. Erin’s research focuses on production practices to enhance the productivity and profitability of organic and sustainable cropping systems. The two main research areas of her program include cover crop systems (with particular emphasis on cover crop-based reduced-tillage techniques) and variety performance in organic production systems. Her extension program focuses on the implementation of food safety practices on vegetable farms, as well as tools to determine cost-of-production on diversified farms.

Richard Lankau
Richard is our newest faculty member, joining the department in August 2015. His educational background includes a Bachelor’s degree in Biology from Rice University in 2002 and a PhD in Ecology at University of California, Davis in 2007. He spent four years as a research scientist at the Illinois Natural History Survey in Urbana, IL, then joined the Department of Plant Biology at the University of Georgia, where he remained until coming to UW-Madison. Richard describes himself as an ecologist generally interested in soil and plant health in both natural and agricultural settings. More specifically, he studies the diverse microbial communities interacting with plant roots and their impact on plant growth, nutrition, stress tolerance and disease. His current research shows that alterations to rhizosphere microbial communities may influence the spread of invasive exotic plant species and the dynamics of tree species ranges in the face of changing climates. New projects will focus on soil health in potato and tomato systems.
Professor Amy Charkowski’s lab group is collaborating with several other groups on campus to find resistance genes to pathogens that affect seed potatoes, identifying novel virulence genes in soft rot bacterial pathogens, and continues to manage participatory potato variety trials on organic farms in the Midwest. They also hosted several visiting scientists and students over the past academic year, including Dr. Yan Wang, China; Camille Guerin, France; Edward Onkendi, South Africa; and Dr. Daigo Aiuchi, Japan.

Lab graduates have had success in finding interesting and exciting new jobs. Hye-Sook Kim recently accepted a scientist job with Du Pont. Chakradhar Mattupalli is a post-doc at the Noble Foundation in Oklahoma. Cliff Hogan is working for Sakata Seed in California. Jenna Lind is working for Organic Valley. Ana Cristina Fulladolsa Palma, who defended her thesis in June, is staying on in the lab for another year as a post-doc and will continue to develop markers for a new potato virus Y resistance gene.

Affiliate Associate Professor Russell Groves has the following news to share of recent Plant Pathology graduates with whom he was working. Dr. Shahideh Nouri (PhD 2012) is pursuing a post-doctoral research associate position in the Department of Plant Pathology at the University of California-Davis. She works in the laboratory of Dr. Bryce Falk examining RNA interference (RNAi) as a tool for targeting specific genes in insect vectors of plant pathogens. Dr. Ken E. Frost (PhD 2012) is an assistant professor and extension specialist in the Department of Botany and Plant Pathology at Oregon State University. His office is at the Hermiston Agricultural Research and Extension Center, Hermiston, Oregon. He focuses on the ecology, epidemiology, and management of pathogens causing disease of irrigated specialty crops such as potatoes, grasses, onion, and carrots. Ms. Chen Zhang (MS 2014) recently accepted a support scientist role at the Michigan State University Potato Breeding and Genetics Laboratory under the direction of Dr. David Douches in East Lansing, Michigan. Her research focus is associated with the development of elite sets of potato virus Y resistant parents for regional breeding programs. Dr. José Pablo Dundore-Arias (PhD 2015) recently accepted a post-doctoral research associate position at the University of Minnesota under the direction of Dr. Linda Kinkel (PhD 1988). He is investigating the microbial ecology of plant-associated bacteria in agricultural soils in Minnesota.

We are sorry to share the news that R.A. (Pat) Kilpatrick (PhD 1951) died on August 31, 2014. He worked for the USDA for 30 years as a research scientist, retiring in 1981. Over his career he was stationed in Mississippi, New Hampshire, Texas, and Maryland.
Students learn how Miller Park battles turf grass diseases

Students in Plant Pathology 559 (Diseases of Economic Plants) were treated to an inside look at the complexities of managing a major league field this summer. Miller Park Director of Grounds Michael Boettcher (BS UW-Madison 2006) gave the group a tour of Miller Park, home of the Milwaukee Brewers baseball team. Miller Park has a retractable roof and when closed in the summer, it converts the stadium into one of the world’s largest moist chambers, says Assistant Professor Paul Koch, who accompanied the group. Summer patch (Magnaporthe poae), leaf blights (Ascochyta and Septoria spp), and pink snow mold (Microdochium nivale) are some of the primary diseases that Michael manages on his Kentucky bluegrass field.

Plant Pathology 559 students touring Miller Park in Milwaukee with Director of Grounds Michael Boettcher are unaware that they are featured on the field’s Jumbotron. Photo courtesy of Maya Hayslett.

Department of Plant Pathology Fund

I/We wish to join other students, alumni, friends and supporters in enhancing the teaching, research, and extension/outreach programs in the Department of Plant Pathology by contributing to the department as indicated below. Please make check payable to UW Foundation. Note in the memo area to which fund(s) you are contributing. Donations may also be made from our website: http://www.plantpath.wisc.edu/donations

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Got News?
We enjoy hearing from our alumni and friends. If you have news you’d like to share, drop an email to: Patty McManus at pmcm anus@wisc.edu or a written note to the Plant Pathology Department at the address listed above.