PPWS News

Plant Pathology, Physiology and Weed Science

2007

Elizabeth Grabau, Plant Pathology, Physiology and Weed Science department head

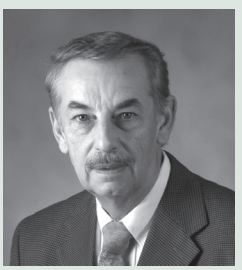
Greetings Alumni, Students, Friends, and Colleagues:

Welcome to our first dual – print and electronic – newsletter! This is also the first departmental newsletter in any format in some time and we plan to publish one on an annual basis. Departmental news and other information are also available on the newly designed website (*www.ppws.vt.edu*). This past year has been quite eventful, with many accomplishments as well as challenges and sorrows. We thank all of you who contacted us and kept us in your thoughts after the events of April 16. The tragedy affected us deeply, but also demonstrated the great sense of community at Virginia Tech that will aid us as we heal and move forward.

We began the 2006-2007 academic year with a departmental retreat to set goals for the next five years. These include increasing collaborative research projects, strengthening ties between programs on campus and the Agricultural Research and Extension Centers, and expanding our graduate programs. I'd like to extend my congratulations to all the graduate students who received their degrees this year. In 2006-2007 there were nine graduations, the most we've celebrated in several years. We've recently begun a graduate curriculum revision and will utilize our website to aid in our recruiting and communication efforts. I invite you to check the website regularly for news and updates and I look forward to hearing from you during the upcoming year.

Elizabeth Grabau, department head

Spotlight on Alumni



Pat Phipps

Pat Phipps (M.S., PPWS, 1972), a PPWS professor of plant pathology, has contributed to minimizing pesticide inputs and reducing their negative impact on workers and the environment, while maximizing yields and profits for Virginia farmers. Phipps was instrumental in developing and implementing a Leaf Spot Advisory program that reduced the use of fungicides on peanut crops. He has collaborated with Elizabeth Grabau, department head and professor of PPWS, to develop transgenic peanuts containing a barley gene that provides disease resistance. He was the first to find soybean rust in Virginia through sentinel plot monitoring in 2006. Phipps was named to the inaugural Farm Press Publications Researchers Hall of Fame in 2006 and cited for developing plant disease forecasting models that have saved Virginia growers millions of dollars each year. He also is helping peanut growers rebound from drastic cuts in acreage due to rising production costs. Phipps is based at the Tidewater Agricultural Research and Extension Center.

Note: Please be sure to complete and return the Alumni Update Form – we might want to feature you in a future newsletter. Also please update your information at the Alumni Association website at* www.alumni.vt.edu/gateway *(select "View and Update Your Profile").

Student News

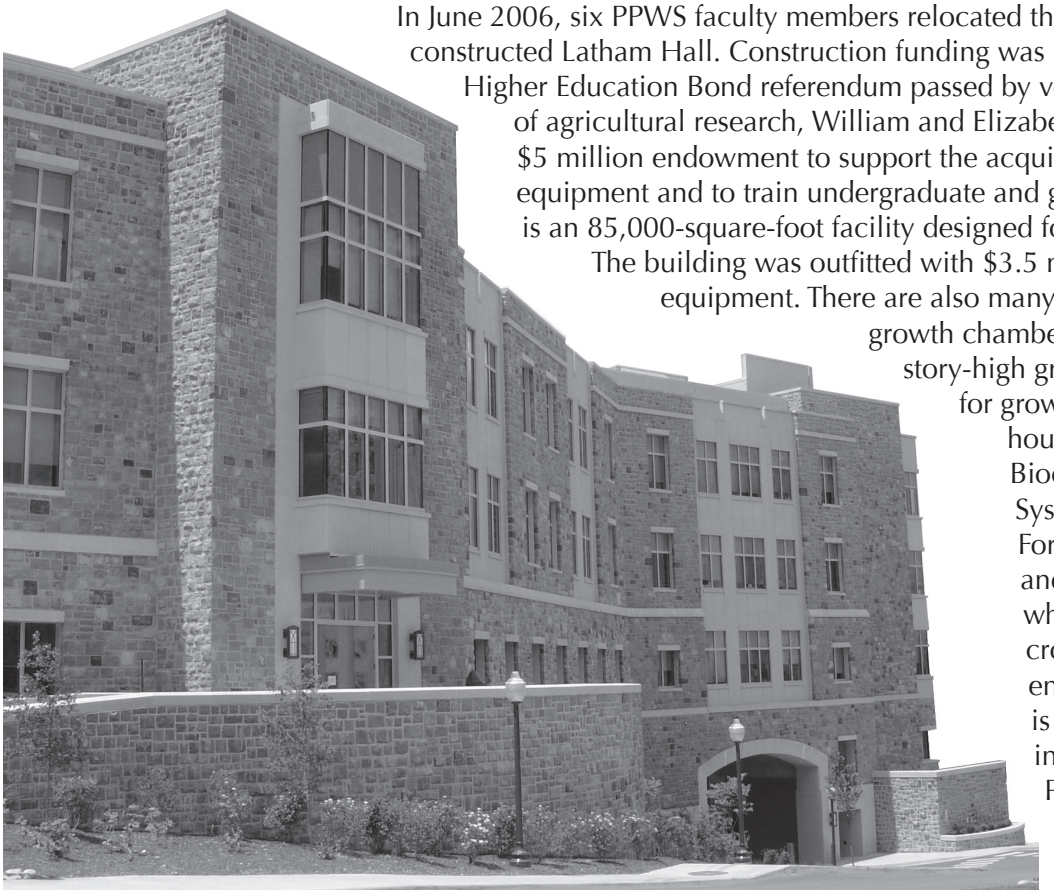
Theses and Dissertations:

- **Eric Hogan**, Charlottesville, Va., Population Biology of *Cryphonectria parasitica* Infected with Cryphonectria Hypovirus 1 on American Chestnut Trees
- **Jiahuai Hu**, Beijing, China, *Phytophthora nicotianae*: Fungicide Sensitivity, Fitness, and Molecular Markers
- **Jianyun Liu**, Guangdong Province, China, Plant-Derived Murine 11-12 and Ricin B-Murine 16-12 Fusions
- **Shrinivasrao Mane**, Bangalore, India, Use of Bioinformatics to Investigate Abiotic Stress in *Arabidopsis* and to Design Primers for Pathogen Detection
- **Mike Reidy**, Waldorf, Md., Engineering of the RTB Lectin as a Carrier Platform for Proteins and Antigens
- **Daniel Ricker**, Standardsville, Va., Elucidating Influence of Temperature and Environmental Stress on Turfgrass Response to Mesotrione and Evaluation of Potential Synergistic Admixtures to Improve Mesotrione Efficacy
- **Cecelia Vasquez-Robinet**, Lima, Peru, Relationships Between Expression of Heat Shock Protein Genes and Photosynthetic Behavior During Drought Stress in Plants
- **Myuong Hui Yun**, Chongro-Gu, Korea, Effect of Ozone on Net CO_2 Assimilation and PSH Function in Plants with Contrasting Pollutant Sensitivities
- **Wenyen Zhang**, Guangdon, China, Identification and Characteristics of Genes Involved in Regulation of Ascorbate Metabolic Pathway(s) in *Arabidopsis thaliana*.

Awards:

- **Stacey Simon**, Frederick, Md., and **Grace Hite**, Kenbridge, Va., were co-winners of the 2007 Arthur J. Webber Award for Outstanding Student, presented at our spring awards picnic.
- **Shanna Chriscoe**, Robbins, N.C., won the Outstanding Graduate Student Award from the Virginia Crop Production Association.
- **Amanda Stiles**, Fairfax, Va., and **Ryan Anderson**, Harrisonburg, Va., were recipients of the Bruce W. Perry Scholarship.

PPWS Faculty Relocate to Latham Hall



In June 2006, six PPWS faculty members relocated their laboratories to the newly constructed Latham Hall. Construction funding was provided by the Virginia Higher Education Bond referendum passed by voters in 2002. In support of agricultural research, William and Elizabeth Latham established a $5 million endowment to support the acquisition of the latest research equipment and to train undergraduate and graduate students. Latham Hall is an 85,000-square-foot facility designed for advanced plant research. The building was outfitted with $3.5 million of new research equipment. There are also many controlled-environment plant growth chambers, which include eight two-story-high growth chambers designed for growing trees. The building also houses faculty members from Biochemistry, Biology, Biological Systems Engineering, Entomology, Forestry, Horticulture, and Crop and Soil Environmental Sciences, who together provide a rich cross-disciplinary research environment. Latham Hall is also the seat of the new interdepartmental Molecular Plant Sciences graduate program.

Latham Hall

New Faculty

Brandon Horvath

Brandon Horvath joined the department as an assistant professor of turfgrass pathology in January 2006. He received his masters and Ph.D. in turfgrass pathology from Michigan State University. He received his bachelor's degree from The Ohio State University in agronomy with a minor in plant pathology. He has worked at several championship golf courses and his research program focuses on important turfgrass diseases in Virginia. His research and Extension efforts strive to enable turfgrass managers to maintain healthier turfgrass stands while reducing the environmental impact of pesticide, fertilizer, and irrigation water inputs. He is located at the Hampton Roads Agricultural Research and Extension Center.

Steve Rideout

Steve Rideout joined the department in November 2005 as an assistant professor and Extension specialist in plant pathology. He grew up on a tobacco, peanut, and cattle farm in Dinwiddie County. He received a B.S. in botany from North Carolina State in 1995 and earned his M.S. in plant pathology from Virginia Tech in 1998. His research on the virulence and host range of the tobacco cyst nematode (*Globodera tabacum solanacearum*) was conducted at the Southern Piedmont Agricultural Research and Extension Center. His doctoral research at the University of Georgia focused on the epidemiology of *Sclerotium rolfsii* in peanut, and he earned his Ph.D. in plant pathology there in 2002. He worked as an R&D scientist with Syngenta Crop Protection in Mississippi from August 2002 through October 2005. He is located at the Eastern Shore Agricultural Research and Extension Center where his research program focuses on improved control tactics and epidemiology of vegetable diseases.

David G. Schmale III

David G. Schmale III joined the department as an assistant professor of mycotoxicology and fungal plant pathology in March 2006. He received his B.S. from the University of California Davis and a Ph.D. in plant pathology from Cornell University. His research program bridges concepts in plant pathology, aerobiology, food safety, and biosecurity. The ultimate goals of his research program are to enhance the protection and safety of the nation's agriculture and food supply and develop new strategies to anticipate, prevent, and respond to agricultural threats of high-risk plant pathogens. He routinely conducts training demonstrations for growers, producers, county agents, government officials, faculty members, and students. He teaches the undergraduate Mysterious Mushrooms, Malicious Molds course and a graduate course in fungal plant pathology.

Faculty and Classified Staff Updates

- **Dawen Xie** joined the department in January as an information technology specialist. He has been working diligently on our new website (*www.ppws.vt.edu*) that debuted in June. We will continue to upgrade the website with new features, so please check it often.
- **Donna Ford**, departmental secretary, was awarded the College of Agriculture and Life Sciences Employee of the Month Award for February 2007.
- **Shawn Askew** and **John Jelesko** were promoted to the rank of associate professor with tenure and **Elizabeth Grabau** was promoted to the rank of professor, effective July 1.
- **Scott Hagood** received the Outstanding Extension Specialist Award from the Virginia Agribusiness Council.
- Departmental awards: **David McCall** received the JoAnne Ridpath Award for Outstanding Staff Member, **Elizabeth Bush** received the Allan H. Kates Award for Outstanding Service in Extension, and **John McDowell** received the Henderson Award for Outstanding Faculty Member.
- The university honored **Sue Tolin** and **Erik Stromberg** at the 2007 recognition luncheon for their years of dedicated service. Tolin has been at Virginia Tech for 40 years and Stromberg for 25 years.
- **Boris Chevone** retired from the department in October 2006.

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Virginia Tech Hosts the 2007 Potomac Division American Phytopathological Society Meeting

The 2007 APS Potomac Division Meeting was held at the Inn at Virginia Tech and Skelton Conference Center March 21-23. The program included three symposia: "Outstanding collaborations between basic and applied plant pathology programs," "Diagnostics and detection: New directions," and "Bridging engineering and agriculture." **Sasha C. Marine**, a graduate student in PPWS, placed first in the graduate student paper competition with her presentation, "Apple Scab Sensitivity to Myclobutanil (Nova) in Virginia." The meeting concluded with an enjoyable and educational "Bridging Engineering and Agriculture" field day at Kentland Farm coordinated by **David G. Schmale III**, assistant professor of PPWS. Highlights of the field day included demonstrations of an autonomous flight to collect plant pathogens in the atmosphere; operation of an autonomous lawn mower by **Brandon J. Horvath**, assistant professor of PPWS; and real-time PCR diagnostics by Norman Schaad, USDA-ARS. Kathryne L. Everts, University of Maryland and **David G. Schmale III**, Virginia Tech, were elected Potomac Division Councilor and Secretary Treasurer, respectively.

Assistant Professor David G. Schmale III and graduate student Benjamin Dingus get ready to demonstrate an autonomous spore-sampling flight at Kentland Farm.

Virginia Extension Agents Get Firsthand International Agriculture Experience

Erik Stromberg and two VCE agents examine soybean leaves for Asian soybean rust with South African soybean breeder, Dr. Antony Jarvie, in Kwa Zulu-Natal.

In March, three Virginia Cooperative Extension agents, David Moore, Robyn Whittington, and Matthew Lewis, traveled with PPWS Extension plant pathologists **Mary Ann Hansen** and **Erik Stromberg** to South Africa to learn more about disease management of agronomic crops. The group visited University of the Free State's Plant Sciences Department as well as agricultural research centers, a seed company, and several commercial and subsistence farms.

Members of the group had the opportunity to observe several new diseases, including Asian soybean rust and maize streak virus. The Extension agents who participated in the trip may be able to put their new diagnostics expertise to work in Virginia this growing season.

Participants in the trip also had the opportunity to see alternative crops such as the fiber crop, kenaf, and processing methods. Markets for kenaf look promising and this crop eventually could prove useful to Virginia farmers as well.

In addition to large scale commercial operations, the group also visited a community garden in Mphophomeni Township and a research farm where a unique irrigation system produced from recycled tires has been developed for small scale growers.

For highlights of the trip, please visit the group's blog site at *www.weblogs.cals.vt.edu/spanning*

International Symposium on Pine Wilt Disease

The international symposium, "Pine Wilt Disease: A Worldwide Threat to Forest Ecosystems," was organized by **Manuel Mota** (Ph.D., PPWS, 1992) and held July 10-14, 2006, at the Gulbenkian Foundation in Lisbon, Portugal. Participants included 103 scientists from 24 countries, representing nematology, entomology, forestry, plant physiology, epidemiology, biochemistry, molecular biology, morphology, and taxonomy. Many facets about the biology of the causal agent of pine wilt, the nematode *Bursaphelenchus xylophilus*, were presented. Topics included global issues, trade, economic impact, biology, inter-relationships, taxonomy, identification, detection methods, tree physiology, resistance, histopathology, ecology, modeling, and pine wood nematode and insect vector control methods. Professor **J. D. Eisenback** of PPWS presented a paper entitled, "Taxonomic Databases for *Bursaphelenchus* and other Aphelenchid Nematodes."

Manuel Mota (third from left) organized the International Symposium on pine wilt disease.

Organizations and individuals associated with the international wood trade and quarantine issues emphasized the fact that the pine wood nematode is not just a nematological or forest protection problem, but also a global issue which affects North America, Europe, and East Asia. Proceedings of the symposium will be published by early 2008 by Springer.

Westwood Organizes World Congress on Parasitic Plants

The 9th World Congress on Parasitic Plants was held from June 3-7 in Charlottesville. The congress is the official meeting of the International Parasitic Plant Society (IPPS) and continues a tradition of regularly assembling the world's experts on parasitic plants. PPWS faculty member **Jim Westwood**, an associate professor, is currently the vice president of IPPS and served as program chair and lead organizer for the congress.

Jim Westwood is pictured here in front of the group.

Eighty participants from 25 different countries attended the congress. Although all conduct research focused on parasitic plants, the participants represented a wide spectrum of disciplines, including biochemistry, phylogenetics, molecular biology, ecology, and weed science. Collecting all these people together provided a fertile environment for the exchange of ideas and exploring different aspects of parasitic plants. A new feature for this congress was the inclusion of two guest speakers from outside the typical parasitic plant research community, with Jeff Palmer speaking about horizontal gene transfer among plants and Maria Harrison discussing plant interactions with arbuscular mycorrhizal fungi.

Breakthroughs in technology that facilitate the identification of seed germination stimulants have challenged our understanding of the biological role of these compounds while genomics, microarrays, and gene silencing are revolutionizing our ability to dissect host-parasite interactions. Despite this progress, participants were reminded that progress in the control of parasitic weeds has occurred relatively slowly, and that effective and practical solutions are needed more than ever.

VirginiaTech
College of Agriculture and Life Sciences

The Department of Plant Pathology, Physiology and Weed Science
Virginia Tech (0331), Blacksburg, VA 24061

Alumni Update Form The Department of Plant Pathology, Physiology and Weed Science

Help us update our information. We are interested in knowing what you are doing! Please help us keep our mailing list current by completing and returning the form to the Department of Plant Pathology, Physiology and Weed Science (0331), Blacksburg, VA 24061 with the following information.

Name: _____

Year and Degree: _____

Home Address: _____

Employer: _____

Current Position: _____

Work Address: _____

E-mail Address: _____

News about Yourself (attach additional pages as needed): _____

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