

# *Plant Science Says*



**Vol. 12, Number 4**

**May, 2009**

## **6th International IPM Symposium "Transcending Boundaries" By Kara Schile**



The 6<sup>th</sup> International Integrated Pest Management (IPM) Symposium "Transcending Boundaries" was held March 24-26<sup>th</sup> at the Oregon Convention Center in Portland, Oregon. "Transcending Boundaries" was put together by all-volunteer planning committees from all over the United States. Integrated Pest Management, or IPM, is a long-standing, science-based, decision-making process that identifies and reduces risks from pests and pest management related strategies. It coordinates the use of pest biology, environmental information, and available technology to prevent unacceptable levels of pest damage by the most economical means, while posing the least possible risk to people, property, resources, and the environment.

Symposium sessions addressed IPM across disciplines internationally, in agriculture, the market place, urban settings, greenhouses, and more. Two poster sessions were held in the evenings. The authors of each poster were with their poster one of the two sessions. Of Montana fame, Dr. Jeffrey Littlefield (MSU Department of Land Resources and Environmental Sciences) discussed his work with a poster on "Development and Implementation of an Area-Wide Management Plan for the Invasive Weed, Tansy Ragwort, in Northwestern Montana" and Dr. Dennis Cash (MSU Department of Animal and Range Sciences) co-authored a poster on "Cultural Control of Weeds in Herbicide-Free Annual Forages".

I attended sessions that concentrated on the urban aspect of IPM. One session was of particular interest to me from an urban and Extension perspective "Reaching Out to the Public: Developing and Delivering Residential IPM Messages".



*Urban landscape in downtown Portland*

The Community IPM Working Group of the Northeastern IPM Center developed two educational outreach poster displays based on messages from the 2007 "Green-Blue Summit". The goal was to highlight poor gardening/lawn care practices and help consumers make decisions that benefit them and the environment. The "Landscape Bloopers" display illustrates common landscaping mistakes, and the "Growing Green Lawns" display utilizes best management practices to solve common lawn problems. Content development was

the result of a multi-regional collaborative effort to build consensus among land grant universities, environmental groups, government, and private industry. Both of **these displays were part of the "One Planet—Ours! Sustainability for the 22<sup>nd</sup> Century"** exhibit at the United States Botanic Garden in Washington, D.C. which ran from Memorial Day through Columbus Day, 2008. The event attracted 750,000 visitors. Additional educational efforts include a **"GrowingGreenLawns.org" Web Site**, a regional lawn care fact sheet, magnet, and a pilot transit project. The initial transit project included placement of a banner on 250 buses and ran from mid-August through mid-October in Montgomery County Maryland. Daily ridership averaged 140,000 people. Based on the success of these projects they will be expanded in 2009 through grant funds and partnering with the North Central IPM Region to additional cities, zoos, parks, arboreta, etc. The transit project will also be expanded to Providence, RI, and Pennsylvania. Community IPM is a new focus area for the national office of the Environmental Protection Agency (EPA) and they have invited us to partner with their Community IPM Working Group. Speakers addressed challenges and outcomes from this outreach effort and how these educational materials will be shared with the audience. Rick Johnson from the Pesticide Education Program, at Penn State University, and Mary Kay Malinoski and David L. Clement both from the University of Maryland Home and Garden Information Center in Ellicott City, Maryland presented this useful information at the IPM Symposium.

Tuesday, March 24, a luncheon and IPM Achievement Awards Presentation was held. **The goal of this year's awards program was** to recognize efforts that have led to the implementation of IPM practices aimed at reducing risks and costs while minimizing negative impacts on people and the environment. These awards recognized outstanding examples of effective IPM implementation, demonstrating a positive impact on end-users.

The following individuals and/or teams were awarded the International IPM Excellence

Awards: IPM CRSP funded by USAID at Virginia Tech, SYSCO Corporation and Participating Branded Suppliers and Growers, GREEN SHIELD CERTIFIED Program of The IPM Institute of North America, Dr. Zeyaur R. Khan, Nairobi, Kenya, and the Salt Lake City School District, Utah.

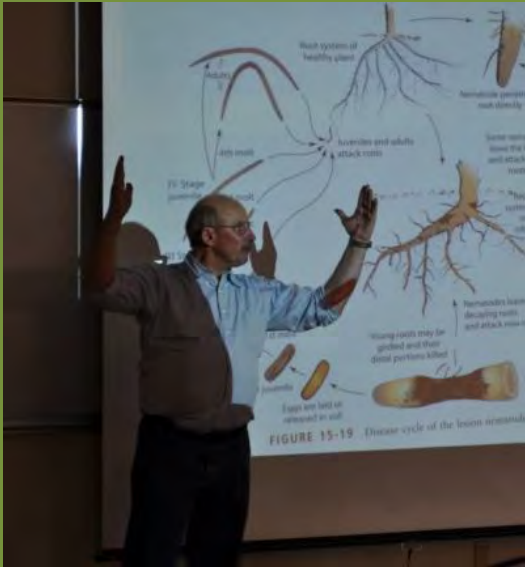
These award winners were ranked highest for exceptional accomplishments relating to economic benefits of IPM adoption, reducing potential human health risks, and demonstrating minimal adverse environmental effects. Bio-Integral Resource Center of California will be awarded the Lifetime International IPM Achievement Award. Their work includes years of accomplishments with IPM and reflects many publications, demonstrations, and real valued outcomes. Three other organizations were presented the International Award of Recognition; Santa Clara County, California, Grower Incentives for IPM Team Project, and the International Team for Sustainable Adoption of Eggplant IPM in South Asia. In 2008, the National Extension IPM Special Projects Program was funded for the second round. In the RFA for that program, the successful applicants were required to report their progress at the IPM Symposium. Projects funded include various data basing efforts for IPM materials, IPM collaborations on tribal lands, IPM for the eOrganic community of practice on eXtension, school IPM, IPM collaborations with Habitat for Humanity, urban IPM certification, IPM and environmental risk assessment, and traditional field guides for IPM in the mid-Atlantic region. The program directors from these successful grant applications will share their progress and early successes on their projects.

Kara Schile presented on the special project **"Implementing IPM Certification for Urban Landscape Professionals and Enhancing Awareness of IPM in the High Plains and Intermountain West"** and took part in the Urban IPM Coordination Committee.

### **Potato Disease IPM Workshop By Nina Zidack**

While March 25 didn't provide great weather for shipping potatoes, it did prove to be a good time to learn more about potato

diseases and their control. The first Potato IPM workshop was attended by 36 growers from all of the major growing areas of Montana, and from as far away as Miles City.



*Dr. Barry Jacobsen educating growers on nematodes (or a fish story!)*

Extension Plant Pathologist Barry Jacobsen presented information on fungal, bacterial and nematode pathogens of potato and their control, and Certification Director Nina Zidack presented information on virus diseases and control of insect vectors. Eileen Carpenter demonstrated the process for potato cyst nematode extraction, Susie Siemsen presented a primer on ELISA and the PCR techniques for diagnostics of potato viruses, and Elaine Nichols demonstrated the tissue culture techniques she uses to maintain and multiply the potato mother stocks. This workshop was supported with funds from a USDA Research and Education



*Growers Bill Cole and Nick Schutter check out their new books on potato diseases and their management*

Grant on Potato IPM that Barry Jacobsen and Nina Zidack received in 2008. All attendees received the "Compendium of Potato Diseases", "Potato Health Management", handouts on all of the lecture materials, and updated fungicide recommendations for use on potatoes in Montana.

### **Paul Trusty and Tom Allen Receive Master's Degrees**



Paul Trusty presented a seminar and successfully defended his research on "Influence of fire on mycorrhizal colonization of planted and natural seedlings of whitebark pine". Paul is a 2008-2009 National

Science Foundation GK-12 Fellow. His research was funded by the USDA Forest Service Fire Program and a 2007 Mycological Society of America Forest Fungal Ecology Award. Paul is completing his M.S. in Plant Sciences in Dr. Cathy Cripps mycology lab.

Paul intends to acquire a teaching certificate at MSU enabling him to pursue a career in teaching. Congratulations Paul!

On March 27, Tom Allen received his MS in Plant Sciences. He is currently working as a county extension agent for Liberty County. Congratulations Tom!

### **Grant Helmer to attend Turf Seminar**



Grant Helmer, a graduating senior in Horticulture Science, has been selected to attend the prestigious 2009 Future Turf Managers'

Seminar at Jacobsen's Headquarters in Charlotte, North Carolina May 18-21, 2009. The program gives students the opportunity to visit some of the nation's most prestigious golf courses and interact with some of the top names in the industry. In addition, students will learn and operate Jacobsen turf equipment to better prepare themselves for their future roles as Turfgrass professionals.

## The Horticulture Open House By Tracy Dougher

The Horticulture Open House took place on April 20. The Hort Club sold hanging plants, garden starts, herbs, etc.



The Plant Propagation class gave demonstrations on plant propagation techniques. The Miracle Growing class performed skits on "science answers to questions you did not know you had about horticulture". The PARKing competition had three teams. The goal was to turn a parking spot into a park. The "GREEN"house parking spot (team from architecture) took the Jury Award



and the one pictured on the next page took the People's Choice Award (landscape design team).

There were also drawings by the Graphics class and Greenhouse models built by the Commercial Plant Production



class. The students helped out with the 88 seventh graders from Sacajewea Middle School that came for a science tour. There were record number of attendees this year; if you missed it, please check it out next year!

## New Employees Muaaz Al-Ajlani (Gary Strobel)



Dr. Al-Ajlani is an assistant professor of rehabilitation at the Syrian International University for Science and Technology, College of Pharmacy, Department of Biochemistry, Damascus. His research includes a multitude of disciplines such as microbiology,

molecular genetics and chemistry. Overall his abiding interest is in natural products chemistry. He has been a post doc in University of Göttingen, Germany for over two years. Presently he is on leave for one month as a visiting scientist to our Department. He is specifically working with Professor Gary Strobel, a world expert in endophytes, hence, he is exploring a new dimension in his research. Endophytes are inexhaustible sources of new miracle drugs and investigating their biological and metabolic diversity is a key for future treatment of diseases. Muaaz has a very positive attitude towards collaborative research and wishes to be contacted by MSU researchers and faculty! He can best be reached by email at [muaaz01@hotmail.com](mailto:muaaz01@hotmail.com)

## Zach Miller (Mary Burrows)

**There's a new face wandering the halls.** Dr. Zach Miller has arrived fresh from the University of Michigan to take a post-doctoral position with Dr.'s Mary Burrows and Fabian Menalled. At M.S.U. Zach will be researching impacts of wheat viruses on crop-weed competitive interactions by testing the relative importance of grassy weed species as reservoirs of the disease and testing how effects of infection on competition between weeds and wheat alter wheat yields and spread of weeds. Dr. Miller, his wife Amanda, and twin daughters are excited to return to the mountains and be involved in department.

Dr. Miller's research experience and interests are diverse spanning the role of plant diversity in ecosystem function to effects of plant-pathogen interactions on plant communities. His interest in ecology began as a field assistant working with David Tilman and others in Minnesota. After graduating from Luther College in Decorah, Iowa he went on to work for Utah State University on how interactions between herbivores and resources structure rangeland plant communities. From the sage brush of Utah he traveled to the Amazon Basin to work with Dr. Paul Fine, now at UC Berkeley, on the role of herbivores in habitat-specialization and plant speciation. He's also worked in agricultural systems with Dr. Matt Leibman at Iowa State in Ames, Zach's home town, on a project that compared the ecological and economic efficiencies of different cropping systems. His PhD. work in Ann Arbor explored the effects of a specialist fungal pathogen on diversity of the plant community in eastern deciduous forests. In the interaction between native rust, *Puccinia podophyllii*, and Mayapple, *Podophyllum peltatum*, he was able to show that Mayapple reduces plant diversity by shading out other plant species but the rust limits the abundance of Mayapple through reducing plant growth and survival. The pathogen checks the abundance of Mayapple because disease transmission and severity increase as Mayapple becomes more abundant.

Zach brings with him his wife, Amanda, an artist, and twin daughters, Sylvia and Elsa,

who will be three in June. He and Amanda met in Logan, Utah while she was earning her graduate degree in art at Utah State. In Utah, they learned to appreciate the mountains and enjoy backcountry skiing and backpacking. They even spent a year backpacking and teaching wilderness skills to juvenile delinquents in the desert of Southern Utah.

When Zach is not busy with family and research, he runs alot. If you don't see him in the hall, you may see him on a trail deep in the mountains. Dr. Miller has competed in many ultramarathons, distances longer than 26 miles, and will run his first 100 mile race this summer.



Zach with his wife, Amanda, on his left and sister Sarah on his right.

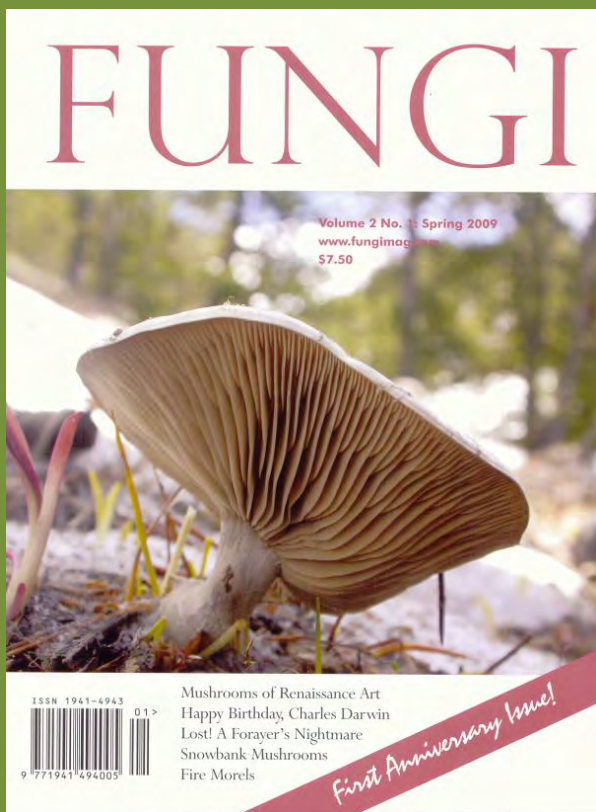
## Publications

Strobel, G. "Under the Red Hat", *Montana Quarterly* 5: 1 p 22-29.

Baumbauer, D. "How to Raise Bees and Why?" *Growing for Market* 18: 4 p 11-14.

Wingler A., Masclaux-Daubresse C. and Fischer A.M. (2009) "Sugars, senescence and ageing in plants and heterotrophic organisms". *Journal of Experimental Botany* 60, 1063-1066; doi: 10.1093/jxb/erp067

Cripps, C.L. 2008. Snowbank fungi revisited. *Fungi* 2(1): 47-53. Cover photo was also taken by Cathy Cripps (see next page).



Alan Dyer \$18,524  
 "Distribution and severity of root diseases in Montana's wheat"

Li Huang \$7,500  
 "Genetic mapping of the new rust resistance genes"

Jack Martin \$7,000  
 "Impact of Polyphenol Oxidase Genes on Asian Noodle Quality and Agronomic Traits in Winter Wheat"

Deanna Nash \$33,000  
 "Improved Quality of Montana Hard Red and Hard White Wheat"

Jack Riesselman \$3,500  
 "Montana Ag Live! Underwriting"

Jamie Sherman \$40,000  
 "Mining for Markers to be Used Marker-Assisted Breeding"

Luther Talbert \$80,000  
 "Spring Wheat Breeding and Genetics"

Kevin Wanner \$5,495  
 "Sawfly and Wireworm Demonstration Plots in Barley and Wheat"

## Grants

Cyndi Smith et al. 2009-2013. "Working together to restore terrestrial ecosystems in the International National Park" \$7.1 million. Cripps lab research component: "Development of an Inoculum for Limber and Whitebark Pine with Native Mycorrhizal Fungi" (\$125,000).

## MWBC Grant Recipients

The following received grants from the Montana Wheat and Barley Committee.

Tom Blake \$55,000  
 "Identifying and Developing Improved Barley Varieties for Montana"

Phil Bruckner \$80,000  
 "Winter Wheat Breeding/Genetics"

Phil Bruckner \$20,000  
 "Enhanced Field Selection for Wheat Stem Sawfly Resistance"

Mary Burrows \$4,000  
 "Wheat pest calendar"

Mary Burrows \$20,000  
 "Susceptibility of Montana cereal crops to Wheat streak mosaic virus and stem rust fungicide trials"

## Poisonous Landscape Plants and Children By Cheryl Moore-Gough



We've been planting poisonous plants in our landscapes for years. Every one of these is dangerous if mishandled or misused. But treated with respect and common sense

they all add a touch of beauty to our yards. Take narcissus, for example. Enjoy the flowers, but eat the poisonous bulbs and you'll be in trouble. All parts of the bleeding heart and the buttercup are toxic if you eat them. Ditto for lily of the valley and the ubiquitous Snow-on-the-Mountain.

Dutchman's Breeches and dumb cane are toxic if ingested, as are the fruit of the black locust, buckeye, and juniper. The leaves of rhubarb and clematis will cause you trouble if you eat them. The degree of toxic reaction depends upon the time of year and the amount of plant ingested, the plant part itself, and the size, age, and health of the person ingesting it.

Living in this world entails risks. It makes more sense to teach children not to eat any plant part unless their parents serve it at the table rather than to restrict your landscape plantings. Educate them and they'll know the right thing to do for the rest of their life.

### Key changes

Starting June 1, we will still do the key requisitions as we always have, but the person wanting the key will have to go to Facility Services sometime between nine and four Monday through Friday to pick up their key. They will no longer be going to the MSU Police. Also, the information will be kept digitally, not on index cards. Over the next few years, Facilities will be doing an audit to see which keys everyone has.

### Bob's Byte Wireless Setup and Security for Home Computers By Bob Johnston

Your home DSL/cable router is likely capable of providing wireless access using Wi-Fi.

The giveaway used to be whether or not it had antennas, but more and more routers today remain stylish by hiding the antenna—even multiple antennas—inside the bezel. Actually, it's hard to find a router today that *isn't* Wi-Fi-capable. PCs with Wi-Fi will see the router almost immediately, but you shouldn't let it go at that.



Wireless networking works on RF (radio frequencies), meaning it's essentially a radio: Anyone within 300 feet (indoors) or 600 yards (outdoors) can tune in to your signal. Some people are quite open to sharing their Internet connection this way, but doing so can leave your PCs vulnerable. Unless you want anyone parked outside your driveway to have access to what's on your

network, your PCs, your hard drives, and more, it's a good idea to use some security. Your router will offer several wireless security options. The two most popular are WEP (Wired Equivalent Privacy) and WPA2 (Wi-Fi Protected Access). Either will give you enough basic protection, though WPA2 is tougher. But many folks still use WEP, because Windows XP has trouble with more advanced forms of wireless security. Moreover, if you've got any older Wi-Fi products around your house using 802.11b technology, WEP is probably all they support. WEP is easy to crack by anyone with the right tools and the time to put in, however, so don't trust it for important data. Windows Vista handles either with aplomb, so stick with WPA2 there.

Setting up wireless is again just a short series of steps. First pick a channel (you can stick to the default unless there are a lot of other wireless routers around, as there probably are in an apartment building). Stick with channels 1, 6, or 11: They don't "overlap" and thus have less interference. Set all your wireless devices to the same channel. The router will then ask you to name its wireless network—this is called the SSID in Wi-Fi-speak. Definitely do not to stick with the default here, which is usually "Linksys" or "DLink" or something similar. Use something personal like "BobsWireless." When asked which security option you'd like to use, opt for WPA2 if you know all the devices on your network support it. After that, simply pick a security key, which boils down to a password-type phrase. Try and go strong here, so not just "password," but "P4ssW0rd1234"—a mix of capitalization, numbers, and symbols with the letters is much harder to crack, let alone guess. Avoid words found in the dictionary. The balance here is finding something easy to remember. Even then, it's a good idea to change that security key every few months.

Save that and all you have to do is go to each of your wireless computers and let them scan for the SSID (BobsWireless). When a device finds it, it will ask you for the security key. Type it in, hit Save, and those PCs will automatically connect whenever they're turned on and in range. To enhance your security, nearly all routers will let you

opt not to broadcast your SSID. All this means is that you must know the ID and input it manually before connecting a laptop for the first time. After that, the SSID will be stored—though outsiders won't be able to see it when they scan the airwaves.—

Thanks to PC Magazine for this information.

### Recipe of the Month

#### Crock Pot Vegetable Soup

Contributed by Joanna Dumas



- 1 stalk celery, chopped
- ¼ c chopped onions
- 4 medium potatoes, peeled and cubed
- 3-4 carrots, sliced
- 1 can whole kernel corn, drained
- 1 can green beans, drained
- 1 can diced tomatoes
- 1 can tomato soup
- 1 can zucchini with tomato sauce
- 1 lb ground chuck, (browned and drained) or ham cubes or leftover diced pork or beef roast
- Salt and pepper
- 4 cups of water

Put everything in large slow cooker (6 qt.) and cook on high for 6 hours or on low for 8 to 10 hours. (You may have to reduce this recipe if you have a smaller pot).

### May Birthdays

Heather Rimel	12
Matt Moffet	14
Robyn Klein	15
Chaofu Lu	16
Mareike Johnston	22
Tom Blake	24
Bob Johnston	29
Deanna Nash	31

