Plant Science Says

Happy Thanksgiving!

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Assistant Dean Search
Four candidates will be interviewing during the month of November for the position of Assistant Dean in the College of Agriculture. The names and dates of the interviews are as follows:

Chris Lamb (MSU) — Monday, Nov. 1
Assistant Dean, College of Business

Ian Godwin (MSU) — Thursday, Nov. 4
Assistant to the Dean for Administration and Finance, College of Nursing

Michael Swan (WSU) — Friday, Nov. 5
Tenured Professor in the Crop and Soil Science Dept.

Nora Smith — Friday, Nov. 12
Recently was consultant for public school system in Chicago.

Faculty are encouraged to attend the faculty meetings on each of the above dates at 12:40 pm. In 108 PBB. If you have any questions, please contact John Sherwood, Search Committee Chair.

Foundation Seed News
By Bill Grey
Since the advent of MSU's research fee and PVP title V policy on Choteau spring wheat, Genou winter wheat, Yellowstone winter wheat and Vida spring wheat, the seed growers and producers have provided over one million dollars to Montana Foundation Seed Program (MFSP), Montana Seed Growers Association (MSGA) and Montana Ag Experiment Station (MAES) Research Fee programs. Is this a surprising number? This is revenue over six years for the purchase of MSU-foundation seed, plus the fees associated with MSGA certification and the MAES Research Fee on seed sold. The following Table is for Crop year 2004 through 2009 with the sales and fees received from Choteau, Genou, Yellowstone and Vida. The receipts are roughly 30% from foundation seed, 30% certification services and 40% to new variety development with the MAES research fee.

What's it all mean? There is tremendous support by the seed growers and producers for MSU varieties and the services that are provided by the three programs. I would venture an opinion that the MSU policy on PVP title V has extended the value of a variety and the sales of certified seed. It certainly hasn't harmed the adoption of the successful varieties. The information presented indicates a Research Fee has been submitted on 2 out of every 3 bushels of certified seed produced, about 67% over the six years (1.250 Mill Research fee Bu / 1.900 Mill Production Bu). The research fee monies are used for PVP licensing, new variety development by the breeders and in support of educational efforts by the Farmers Yield Initiative.

Program	Choteau (6 yrs), Genou (5 yrs), Yellowstone (4 yrs), and Vida (3 yrs)	Crop Year 2004 to 2009
MT Foundation Seed Program	12,231 bu	$339,549
MT Seed Growers Association	650 applications	$17,550
MT Seed Growers Association	66,628 acres in program	$166,670
MT Seed Growers Association	1,900,890 bu production fees	$95,044
MSU MAES- Research Fee	1,272,485 bu certified seed sold	$399,659
		$1,018,472

MFSP saw a bumper allocation of Decade winter wheat this fall with 1409 bu received by MSGA seed producers. North Dakota

Foundation Seed Stocks Program allocated a little over 1600 bu of Decade to their members. Gregg Carlson, as Merlin the Magician, passed his wand across the Decade crop at NARC to produce a phenomenal 80 bu / AC and with his able juggler Jim Whitmus they were able to capture every kernel of the bountiful harvest. At CARC, Joe Vavrovsky did a stellar job of seed processing while Dave Wichman and Lorrie Linhart ensured that all seed found a happy home with the owners. Jerry Bergman and Ron Brown dodged weekly rains to harvest their Decade at EARC and with the assistance of Neil Riveland and Sanford Qvale at Williston R&E, their seed was allocated along with ND's production. With thanks to MSGA members and the ND seed producers, the joint release of Decade flowed smoothly and in time for fall planting. Additional foundation seed allocations included: Yellowstone 270 bu, Genou 180 bu, Rampart 28 bu, Willow Creek 72 bu, 9.6 cwt Frank Spelt and Windham pea 2000 lbs.

ETHNOPHARMACOLOGY students at University of Montana make annual visit to PSPP
By Florence Dunkel

Now a 15 year tradition, University of Montana students in Ethnopharmacology and their pharmacology professor, Dr. Rustem Medora, paid their annual day-long visit to Gary Strobel, Florence Dunkel, and Cathy Cripps on 24 October 2010. Ethnobotanical / microbial projects at MSU is their focus. This year students included a postdoc in biochem, pharmacy students, pre- and post-baccalaureate students in public health, psychology, botany, premed, plant ecology, as well as a Montana farmer/rancher.

U of M students spent all day in labs of and in conversation with Drs. Strobel, Dunkel, and Cripps. In Cathy Cripps lab students learned the basics of fungal biology and how identification of a fungus can open doors to electronic information on what is known about that fungus. This includes information on the interesting secondary compounds produced by fungi involved in mushroom poisoning and those with immunostimulant, antiviral, antibacterial (antibiotic), and anti-cancer properties beneficial to humans. During a tour of the Plant Growth Center, Cathy showed students the numerous ongoing experiments involving plants and fungi, both pathogenic and mycorrhizal.

Dunkel featured two of her natural product toxicology projects for the U of M visit this year. First she told the story of the unlikely link between Montana sugar beet farmers and a botanical suggestion by Rwandan subsistence farmers for organic management of insects, nematodes and fungi in high value crops. This suggestion, the Mexican marigold**,** *Tagetes minuta* shoot extract is now commercially available and Dunkel has just established that (Environ Ent 2010, 39:979-988) it causes dose-dependent mortality and developmental arrest of the sugarbeet root maggot without interfering in the action of entomopathogenic fungi when applied together. Forthcoming are her publications on production of *T.minuta* shoot mulch without seed production integrated into sugarbeet production systems in eastern Montana.

For the second story from her research program, Dunkel was joined by her grad student in Health Sciences, Ky-Phuong Luong. They explained how their village-based research in Mali is making use of local plants to alleviate malaria and a malnutrition condition, kwashiorkor, caused by deficiency of certain essential amino acids. Mr. Luong and Dunkel presented their research on use of neem leaf slurry, *Azadirachta indica,* in field and lab bioassays versus the malaria vector, *Anopheles gambiae* as part of an integrated community management plan resulting in cessation of childhood deaths from cerebral malaria. Dunkel also presented her recent embryogenesis research on the cowpea weevil with shea butter, *Vitellaria paradoxa,* for long-term postharvest protection of cowpeas, a preferred local legume providing most of the essential amino acids missing in Malians' grain-based diet.

Gary Strobel presented his adventures in bioprospecting with details of endophytic fungi from around the world. Students heard his well-known story of the endophyte producing taxol as well as the newer results with the fungus *Muscodor albus* producing volatiles toxic to other fungi. They also visited his laboratory where he brings many other fungi to evaluate their usefulness to humans.

MAES Schedule
Following is the schedule for the MAES seminars for this fall.

Bill Hoch – "Development and Production of Ornamental Plants for Montana"
Thursday, 11/18, 3:00 p.m., 325 LJH

Mike Giroux – "Small Grain Quality and Molecular Biology"
Friday, 11/19, 8:00 a.m., 108 PBB

Tracy Dougher – "Commercializing Production of Native Montana Species"
Monday 11/22, 8:00 a.m., 108 PBB

Luther Talbert – "Spring Wheat Breeding and Genetics"
Monday, 11/29, 9:00 a.m., 108 PBB

Bob Sharrock – 241 – "Molecular Genetics of Plant Light Responses and Reproductive Development"
Tuesday, 11/30, 1:00 p.m., 108 PBB

Katie Hopp Wins Award

Congratulations to recent MSU grad, Katie Hopp, winner of J. Gordon Edwards Prize for the best scientific paper about beetles based on a Master's degree thesis published in the world in 2009. This cash prize is awarded annually by the Coleopterists Society. It was awarded for her paper: A Revision of the West Indian genus *Nesocyrtosoma* Marcuzzi (Coleoptera: Tenebrionidae), published as the 2009 Patricia Vaurie Monograph in Coleopterists Bulletin 63 Supplement: 1-138. This follows her paper winning the honor of being selected in an open competition with established scientists to be published as the Vaurie Monograph. The award will be presented at the CS Annual Meeting in San Diego in December. Hopp received an M.S. in Entomology from MSU in 2008, advised by Michael Ivie, in the Department of Plant Sciences and Plant Pathology.

Thesis Defense
Jean Allen will be presenting her Master's thesis defense on Friday, November 12, in 325 LJH at 1:00 p.m. It is entitled "Evolution of the Molecular Mechanisms of Sex Pheromone Detection in European and Asian Corn Borers".

Panel Discussion
On Wednesday, November 3, in SUB 168, the MSU Office of Career, Internship and Student Employment Services is offering the following panel discussion "What Can I Do with a Career In… Sustainable Food and Bioenergy Systems". The panelists will include Tim Trzinski (Gallatin Valley Food Bank, David Miller (CHS Nutrition), Doug Crabtree (Organic Certification Specialist at MT Dept of Ag) and someone from Senator Baucus' office.

Hort Club Update
By Tracy Dougher
This year's MSU Horticulture Club has several new ideas and projects to fulfill. The President is Allen Stekmest, the Vice-President/Treasurer is Kristi O'Brien, and the Secretary is Jamie Raznoff.
We are working to incorporate members of a student chapter of ASLA (American Society of Landscape Architects) into our club. Their insight and participation would be greatly appreciated.

The club is working towards raising funds for a club trip to Canada during the week after finals this May. The trip is still in the planning stages but there are several things on the table including: the Muttart Conservatory in Edmonton, the Nikka Yuko Japanese Garden in Lethbridge, and the Devonian Gardens in Calgary (Due to re-open in the spring/summer of 2011).

Kristi O'Brien—Vice President/Treasurer, Allen Stekmest—President, and Jamie Raznoff—Secretary

Other trips we might make this year include the MNLA (Montana Nursery and Landscape Association) conference in billings, Tizer Botanic Gardens & Arboretum, and nature hikes in the surrounding area.

Our current big project/fundraiser is selling potted herbs at the Winter Farmers Market. Some of the herbs we have started include Basil, Oregano, Dill, Parsley, and Sage. We plan to be ready for our first market on November 20th. Other possible fundraisers that we have considered is growing cut flowers for Valentine's Day, growing edible mushrooms, selling spring bulb pans, selling Christmas wreaths. Volunteer activity ideas for this year include a food drive, and making Christmas decorations with kids.

These are just ideas and we would love suggestions on fundraisers or volunteer projects that you might have. We can be reached at our e-mail address: hortclub-msu@gmail.com

Course Focus
BIOB 318 Biometry - Jack Martin
If you told someone you were taking a course called Biometry, most would not know what the course was about. Biometry has its origin in two Greek words, bios (life) and metron (measure). Thus, biometry means measurement of life. A more practical definition is the application of statistics to solution of biological problems. So topics included in Biometry include: descriptive statistics (measures of center and spread of data), basic ideas about probability distributions, concepts of statistical inference (interval estimates and hypothesis testing) and relationship between variables (linear correlation and regression).

The format is three lecture periods per week. Lecture notes, assignments, problem solutions, data files, Excel help, sample exams and current exam solutions are available on Desire2Learn. Students use statistics capabilities within Microsoft Excel to do out of class exercises. This 3 credit course is offered each Fall semester. This semester there are 50 students representing 12 different majors from three colleges.

Since I am in the Plant Sciences and Plant Pathology department, what would qualify me to teach a course like this? I am reminded that R. A. Fisher, who contributed much to statistics and genetics during the 20th century, said, "I believe sanity and realism can be restored to the teaching of Mathematical Statistics most easily and directly by entrusting such teaching largely to men and women who have had personal experience of research in the Natural Sciences." In that light, my degree program was in plant breeding with a minor in statistics. My research has been in plant breeding, and I have encountered many applied statistics problems over the years. I believe those experiences help me to relate these topics to students.

New Employees

Xiaojing Wang (Li Huang)

My name is Xiaojing Wang and I am from Northwest A&F University in Yang Ling city, Shaanxi Province of China. In 2004, I accepted a teaching position in the College of Life Sciences at Northwest A&F University. For the past one and a half years, I have been working in the Molecular Biology Key Laboratory of Agriculture which is the larg-

est research center for wheat stripe rust in China. Our study mainly focuses on the interaction between wheat and rust fungi.

Montana State University is my first choice for visiting because I am keenly interested in acquiring more theoretical knowledge and practical skills in plant molecular pathology and I am fascinated with host-pathogen interactions. So Li Huang's lab is an appealing option in the PSPP Department. I will do research in Dr. Huang's lab as a visiting scholar for one year. My research will be focused on identifying the avirulent factors of *Puccinia triticina* to the *Lr21*gene of wheat.

I like the big sky which is blue and shinning and I like our lab group members who are all friendly and patient. I hope to be able to combine what I will learn here with my previous experiences so as to better help my students and aid in the development of my university.

Publications

Williams, Ashley L., Sarah J. Halvorson, Sidy Ba, and Florence V. Dunkel. 2010. Water quality and waterborne disease along the Niger River, Mali: A study of local knowledge and response. Health and Place. in Press. 16:in press.

This publication is a result of our Expansive Collaborative Model for teaching and learning. It is a collaboration between MSU, University of Montana, and the agricultural university of Mali, Institute Polytechnique Rurale et Formation Recherches Appliquee and the disciplines of cultural geography, environmental engineering, and entomology. Williams was a jointly mentored M.S. student between U of M and MSU, and also a 2005 Mali extern and a 2008 solo extern in Mali.

Grants

Zidack, Nina, Montana Specialty Crops Program, "Adopting real-time PCR protocols for pathogen testing, optimizing potato micro-tuber production, and updating the seed potato certification database to facilitate end-user compliance with Good Agricultural Practices." $50,000 2 yrs.

Burrows, M., Linnea Skoglund, and Jane Mangold. EPA-PESP. Reducing pesticide use by expanding the educational mission of the Montana State University Urban IPM program. $52,990.

Strobel Gary, Department of Energy, "Mycodiesel from various endyphytic fungi". $50,000.

Window 7 Tips
By Matt Rognlie (Irene Decker filling in)

Tip #1

Handy Keyboard shortcuts

Windows 7 includes many new keyboard shortcuts that put frequently used actions at your fingertips. Learn these keystroke combinations and you'll soon be saving a few seconds of mousing time here and there throughout the day. It adds up.
Note: For those who don't know, "Windows Logo" refers to the key with the Windows flag on it, generally located between the Ctrl and Alt keys, to the left of the space bar.

Display or hide the Explorer preview pane: *Alt-P*

Zoom in: *Windows Logo*-+[plus sign]

Zoom out: *Windows Logo*- −[minus sign]

Maximize window: *Windows Logo-Up Arrow*

Minimize window: *Windows Logo-Down Arrow*

Snap to the left-hand side of the screen: *Windows Logo-Left Arrow*

Snap to the right-hand side of the screen: *Windows Logo-Right Arrow*

Tip #2

Create Keyboard Shortcuts for Programs

In addition to using Windows 7's default shortcuts, you can also create your own shortcuts to launch your favorite pro-

grams. First, right-click on the program icon, choose *Properties* to open the Properties dialog. Click on the dialog's Shortcut tab, click in the *Shortcut key* text box, and press the key you want to use for that program. Your shortcut will use Alt-Ctrl plus your key—you can't overrule standard system shortcuts. Also, you can't use the Esc, Enter, Tab, Spacebar, PrtScn, Shift, or Backspace keys for obvious reasons.

Tip #3
Jump Lists
Windows 7's new Jump Lists appear in the Start menu and Taskbar buttons for programs that support the feature. They give you instant access to frequently used commands such as opening recent files or performing program actions. To access Jump Lists you can either click on the right arrow in program's Start menu entry, or right-click an icon in the task bar or left-click and drag the list open. If there's a document you want always accessible from the jump list, you can just click on the pushpin icon in the right of the document's entry.

Tip #4
Clean Up Your Screen
Focusing on one window when you have multiple windows open can be distracting. But instead of having to minimize every window one-by-one you can quickly unclutter your screen using Aero Shake. Simply click and hold the title bar of the window you want to leave open, give it a quick shake, and your screen will be cleared of all windows except the one you're working in.

Tip #5
Aero Peek
Another option for navigating a screen cluttered with windows is Aero Peek. Hover the mouse over the lower-right corner of the screen. Click the button if you want to keep this view, showing only the desktop. This takes the place of previous Windows versions' Show Desktop icon in the vanished Quick Launch toolbar. If you've moved your Taskbar to the top or sides of the screen, this button will be at the top right or bottom of the taskbar, respectively.

Tip #6
Search the Web from Your Desktop
You can use Windows 7's built-in search as an online search tool without having to launch a Web browser, by using search connectors. For instance, if you wanted to search YouTube videos from your desktop, just download and install the YouTube search connector. This adds a "YouTube Search" option to your Searches folder, which lets you browse YouTube from your desktop.

- Note the searches won't be added to the Start menu's search box. If you search on something in there first, and then click Enter, you'll get to an Explorer window that now includes, for example, a YouTube search entry under Favorites. Click on this to get results at YouTube right in the Explorer window. Drag the icon with the right mouse button to create a desktop icon for the search provider.You can find search connectors at sevenforums.com, which also teaches you how to create your own.

Tip #7
Combine Taskbar Icons
When you have a ton of windows or apps opened at once, it can be hard to navigate among them all. Luckily, Windows 7 let you combine icons to keep your taskbar neat and organized. To combine taskbar icons, right-click the Start button, go to *Properties > Taskbar*, and under *Taskbar Buttons* and choose *"Always Combine, Hide Labels"* or *"Combine when taskbar is full."* Alternatively, if you want to see everything with labels, you can choose *Never combine*.

De-icing
By Toby Day
This week I put away the rototiller and brought out the snow blower. I know that in a few weeks I will be removing snow from my sidewalks and my driveway. Because I live fairly close to campus, I get a lot of foot traffic before I can clear a lot of snow off the public sidewalks. The trampled snow becomes ice that the snow

thrower can't remove and I am stuck using some kind of salt-type product to melt the built up ice.

The results of my overuse of ice melting products really took a toll on the turfgrass and plants along my sidewalk and the sidewalk itself took a beating. The topcoat (smooth layer at the top of the concrete) came off due to high concentrations of salt and made the walk crumbly and even unsafe. This year I am determined to use something that is less destructive.

Most de-icers are made of rock salt or sodium chloride. This is what causes plants to die (Much like if I added too much fertilizer) and is what caused the sidewalk to crumble. Calcium Chloride, although more expensive, is effective in melting ice down to -20^{o}F (a much lower temperature than rock salt at 15^{o}F) but is easier on the concrete and nearby plants.

This year I will also use dark color abrasives such as course sand or even bird seed (may become weedy) in areas that see a little sun. I will also try to channel the water that comes off my sidewalk and driveway away from landscape plants the best I can.

If your sidewalk gets the topcoat destroyed due to too much salt, the only way to fix it is to call in the concrete crew. If the planting bed is affected, leach the salt through the soil profile with copious amounts of water.

Recipe of the Month

Pumpkin Dump Cake
Contributed by Courtney Speegle
30 oz can pumpkin pie filling (or add your own spices to plain pumpkin)
18.25 oz box yellow cake mix (Betty Crocker has a gluten free cake mix)
1 cube butter
1/2 c mini semi-sweet chocolate chips
1/2 c chopped pecans or walnuts
Whipped cream
Nutmeg (optional)
Preheat oven to 350. Spray a 13x9 inch baking dish with non-stick cooking spray. Spread the pumpkin pie filing evenly in the bottom of the baking dish. Cover with the cake mix. Sprinkle the cake mix with the chocolate chips and the pecans/walnuts. Cut the butter into small cubes and evenly dot the top of the cake.

Bake for 40-45 minutes or until golden brown. Serve with whipped cram sprinkled with a light dusting of nutmeg if desired. Also good plain or with ice cream.

November Birthdays

Jim Berg	4
Jack Martin	8
Harvey TeSlaa	15
Adam Richman	22