

# PLANT SCIENCE SAYS



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## Departmental Christmas Party



The Departmental Christmas party will be on Friday, December 12, at 5:30 p.m. at the Bozeman Senior Center (directions are at the end of this newsletter). Dinner will be at 5:45 p.m., Santa will be showing up around 7:00 p.m., and after that you will have the opportunity to play Bingo (really great

prizes this year!).

Please bring one of the following to share: Hors d'oeuvres, a vegetable or potato dish, salad or dessert. The meat, rolls, and drinks will be provided. Please join us! Note: They do not allow alcoholic beverages as it is a city owned facility.

## Annual ASA-CSSA-SSA Symposium by Jamie Sherman

Jamie Sherman was an invited speaker during

a symposium entitled "Training the Next Generation of Plant Breeders" at the annual ASA-CSSA-SSA. The symposium was established due to concern for the paucity of plant breeders. The symposium established the importance of plant breeding, defined the skill set required of a 21<sup>st</sup> century plant breeder, discussed methodology and pedagogy for plant breeder training and established the importance of university, government and industry collaboration. As well as being part of the research faculty in the Plant Sciences and Plant Pathology Department, Jamie Sherman is the education and extension coordinator for the USDA-CSREES-NRI funded Wheat Coordinated Agricultural Project (WheatCAP). WheatCAP is a multi-state, multi-institution project dedicated to the genetic improvement of US wheat through research, education and extension. Jamie discussed the WheatCAP's efforts to train plant breeders, including efforts to encourage students in outreach. One important function of plant breeders is to

The screenshot shows a web browser window titled "Wheat CAP Education and Outreach - Windows Internet Explorer". The address bar shows the URL: [http://www.plantsciences.ucdavis.edu/MASWheat/Education/animations/anim\\_quality.htm](http://www.plantsciences.ucdavis.edu/MASWheat/Education/animations/anim_quality.htm). The website content includes a navigation menu for "Outreach and Education" with links to WheatCAP Home, Education and Outreach, MAS Traits, Upcoming Events, and a recipe tip. Below this is a "Cereal Quality" section with a "go to:" dropdown menu and a "Dough Quality" section. The "Dough Quality" section features a "Mixograph" section, which explains that a mixograph traces a curve during the dough mixing process. It lists four measurable factors: Strength, Stability, Tolerance, and Water absorption. A "Mixing Time" section is also mentioned. To the right of the text is an image of a mixograph machine. The footer of the page lists "Animations" available for download, including Marker Assisted Selection, Sawfly Resistance, DNA Extraction, PCR, Gel Electrophoresis, Genetic Mapping, Protein Formation, Plant Breeding: a Modern Career, and Score Glutenin Gels.

Cereal Quality animation made with the assistance of MSU's Cereal Quality Lab

## Plant Breeding: a modern career



Plant breeding recruitment animation (view at <http://maswheat.ucdavis.edu/Education/index.htm>)

communicate with the public and the WheatCAP supplies ample opportunity for students to practice and improve outreach skills. WheatCAP also provides tools to improve communication between scientists and the public which can be downloaded from the website (<http://maswheat.ucdavis.edu/Education/index.htm>). These materials include newsletters, flipcharts, fact sheets and educational animations which are available for public use. In an effort to attract plant breeding students to WheatCAP universities, Jamie Sherman has produced a recruitment animation which is being used by Michigan State, Washington State and Virginia Tech and is available for use by MSU. Also, a group of WheatCAP members including Luther Talbert and Jamie Sherman received funding for seven USDA National Needs Graduate Fellowships in plant breeding with a focus on recruitment of under represented groups or first in family students. At the symposium ideas were discussed for improving on these efforts as well as new ideas to attract and train plant breeders.

UST's School of Business is located in the heart of Minneapolis MN. The 30 grad students are in the evening program and so have full-time jobs in Twin Cities businesses. Once a week, they gather for their three-hour Project Management course with an international action research format. What this means is these 30 students are each assigned to a team whose "sponsor" is Aissata or one of her five colleagues in the Mali Agribusiness Entrepreneurial Incubator Center. The "center concept" was proposed by Dunkel in 2004 (and funded by Higher Education for Development with USAID funds) in collaboration with faculty at MSU (N. Weeden, B. Jacobsen, D. Sands, C. Montagne, W. Jones) and UST.

Between weekly class meetings, M.B.A. students meet in person in Minnesota or via phone, e-mail, and free internet voice-over internet protocol with their Malian sponsor. Aissata is the sponsor for the Seed Potato Quality Team and also serves as the overall organizer and link to the Dogon village of Borko that has asked to be the pilot site of the first Mali-certified, disease-free seed potato production.

Former PSPP students, Adama Berthe, instructor in Institut Polytechnique Rural / Institut Formation Recherches Appliquees (IPR/IFRA) the national agricultural college of Mali and Abdoulaye Camara, now tenured scientist with the national agricultural research organization of Mali (IER) are assisting Aissata by serving as sponsors for the Seed Potato Storage Team and the Seed Potato Governance (certification rules) Team, respectively. In November, Aissata's two other partners in the Center traveled from Mali to UST to personally help with issues of seed potato marketing in Mali, a country dominated by the European suppliers and seed potato transportation from lab to field and field to food potato growers (not a simple matter in Mali). Belco Tamboura, Professor of Economics at the agricultural college of Mali sponsors the Seed Potato Marketing Team. Professor of Agricultural (hydraulic) Engineering, Sidy Ba (MSU 2008 M.S. grad in Environmental Engineering), is sponsor for the Seed Potato Transportation team.



*Dan Quinn, MSU graphic design student, created educational materials for WheatCAP*

### **MSU Plant Pathology Grad Links with Urban MBA Students to Launch Certified Disease-free Seed Potato Program in Malian Villages** **By Florence Dunkel**

Former MSU grad student (M.S. 2008), Aissata Thera has mobilized a class of 30 M.B.A. students at University of St. Thomas (UST) where the word agriculture was not spoken until our collaboration began in 2002.

The final product of this semester's management course is a detailed plan for Mali's certified, disease-free Seed Potato Program. The pilot program is underway with meristem cultures of varieties from CIP and local Malian growers in nuclear generation production. The first generation in village fields will be planted in Borko in spring 2009.

This January, four of the M.B.A. students will travel to Mali to work with Aissata and the Center to complete a detailed business plan for the Center's agricultural services which includes launching the certified, disease-free seed potato production and marketing program. Also in January, 2009, Aissata and Adama will travel with UST sociology and French students to the village of Borko to work with villagers as they express their concerns and perceptions of this new agricultural marketing venture the village requested help to launch. Meanwhile, UST students in the local chapter of Engineers for a Sustainable World are designing storage structures for several stages of seed potato storage.

Each of these Malian sponsors is also working with our action research in PSPP 465R Health, Poverty, Agriculture focused on malaria IPM



*Professor Sidy Ba, hydraulic engineer, answers water issue questions of the Malaria action research team composed of students in PSPP 465R. These students are majoring in Horticulture, Biomedical Sciences, Neurosciences, and Political Science.*

sustained by villagers. In November and December we are also having Profs. Tamboura and Ba in our classroom in Plant

Biosciences and in individual research mentoring in the Marsh Laboratories. This is all part of the "*Quiet Revolution*" begun when a three year grant was awarded to MSU (P.I. Florence Dunkel) by the USDA-CSREES Higher Education Challenge Grant Program. The three-year grant encouraging this *Quiet Revolution* is titled "New Paradigm for Discovery-Based Learning: Implementing Bottom-up Development by Listening to Farmers' Needs and Using Participatory, Holistic Processes." Partner schools are Virginia Tech, University of St. Thomas (St. Paul, MN), the tribal community college Chief Dull Knife College, University of California-Riverside, and UC-Davis.

### **Class Focus**

#### The Landscape Graphics Class

By Page Huyette



PSPP225 Landscape Graphics students use the Arboretum site for a class project on measuring, gathering site data and developing Landscape

Conceptual plans. This class covers an introduction to hand graphics, color theory, perspective drawing and the design process as it relates to Landscape Design.

### **Ph.Ds and New Employees**

#### **Leila Feiz**

Leila received her PH.D. on November 20, 2008. In her new position as a post doc for Mike Giroux, she will be working on cereal plant molecular biology.

#### **Oliver Neher**

Oliver received his Ph.D. on November 13, 2008. Oliver is starting his new position at Twin Falls Idaho in January. He will be working as an extension specialist/assistant professor for the University of Idaho. His

main focus will be on sugar beets, alfalfa, corn, barley, and dry beans.

### **Eva Grimme**

Eva received her doctorate on November 24, 2008. As a post doc for Cathy Cripps, she will be working on "development of inoculation methods to optimize the root colonization of white bark pines by ectomycorrhizal fungi".

Congratulations Leila, Oliver and Eva!

### **Duke Pauli**



Hello. My name is Duke Pauli and I was recently hired by the Blake lab as their full time research associate. I was born in Great Falls, Montana and spent my formative years living in the Missouri River canyon attending

Cascade High. After graduating, I decided to attend Montana State University even though I come from a heritage of Grizzlies, which needless to say causes a slight rift when football season rolls around. I graduated last May with a BS in Biotechnology focusing on animal systems, but after completing an internship in the VTMB department I quickly realized that working with mice was not for me. Luckily, I had been working for the Blake's during my undergraduate career and when they said they would be hiring a tech, I jumped on the opportunity to get back to working with plants. In my spare time I enjoy doing many things but at the top of the short list, cycling reigns supreme and is actually one of the reasons I chose to come to school here (the single-track around Bozeman is great). Since I grew up on the Missouri (near Holter Dam for those familiar) it is only natural that fly fishing is one of my other favorite things to do as well as fly tying. I have been working in this department for three years off and on and recognize most of the faces around but sadly I do not know that many names, so I hope to "officially meet" most of you!

### **Publications**

Wenda-Piesik, Anna, Zhitan Sun, William E. Grey, David K. Weaver and Wendell L. Morrill. Mycoses of Wheat Stem Sawfly (Hymenoptera: Cephidae) Larvae by *Fusarium* spp. Isolates. Environmental Entomology Section: Biological Control. Manuscript #EN-08-195.

### **Cranberries!**

#### **By Cheryl Moore-Gough**



Well, it's hard to believe that the holidays are here. Where did this gardening season go? Gardeners associate November and December with fruit and vegetables traditionally served at the Thanksgiving and

Christmas meals. And first on their mind are cranberries, a tart fruit we rarely find in our own Montana gardens.

Most cranberries today are produced commercially in Massachusetts, Wisconsin, Washington, and several other northern states. But the early New England settlers learned from the native tribes to harvest the tangy wild flaming-red fruit from cold tangled bogs. It was a major ingredient in sauces and pemmican. As wild berries failed to meet the growing public demand for a greater supply, this relative of our Montana huckleberry entered commercial production in Massachusetts in 1845, and the market has increased ever since.

For years, cranberry juice has been a folk remedy for infections of the urinary tract, but only recently have medical researchers found that antioxidants in the red pigment of the cranberry may have anti-cancer properties. In fact, this entire group of plants in the genus *Vaccinium*, including blueberry, Montana blue huckleberry, and European bilberry have caused quite a stir in the medical community. Only time and extensive testing will show if medical suspicions actually bear fruit (sic).

Meanwhile, sit back, enjoy that Christmas meal, and heap that cranberry sauce on your

plate. It's better for you than you may have thought.

## Bob's Byte

By Bob Johnston

### Outlook Hints

Open Calendar, Contacts, or Task List in a separate window

Tired of clicking on the navigation buttons every time you want to switch between your Inbox and Calendar?



Right-click on any of the Navigation buttons and choose *Open in a New Window*, and you can keep your Calendar or Contacts open in windows of their own. They'll stay open while you deal with messages; simply use Alt-Tab to navigate between the windows.

Display multiple dates in the Calendar

You can display multiple, noncontiguous dates in the Calendar by going to the monthly calendar display in the upper left of the Calendar window and Ctrl-clicking on the dates you want to view. Each date you Ctrl-click will appear as a column in the main Calendar display. You can also display any continuous range of dates by dragging the mouse over a series of dates on the monthly calendar.

Add a contact from an e-mail message

To add the sender of an e-mail message to your Contacts, go to the message itself (not the entry in the message list), right-click on the sender's name, and choose *Add to Outlook Contacts*.

## Recipe of the Month

### Rosemary-Scented Pork Loin Stuffed



3 T olive oil  
16 whole peeled garlic cloves  
2 T minced garlic cloves  
1 – 8 pound whole boneless pork loin, patted dry, at room temperature

Salt and freshly ground pepper  
3 T minced fresh rosemary (snip with scissors), divided

16 dried apricots (or similar amount of your favorite dried fruit)

1/3 c dried cranberries

Heavy duty kitchen string or twine

¼ c apple jelly

¼ c port

½ c chicken broth

2 t cornstarch

Adjust oven rack to upper-middle position and heat oven to 250. Heat oil in a small skillet over medium – low heat. Add whole garlic cloves and cook, stirring occasionally, until soft and golden, about 5 minutes. Remove with a slotted spoon. Reserve oil

Turn pork loin fat-side down. Slit lengthwise, almost but not quite all the way through, to form a long pocket, leaving a ½ inch border of unslit meat at each end. Brush cavity with some of the reserved garlic cooking oil, and sprinkle generously with salt and pepper and 1 T of the rosemary. Line cavity with sautéed garlic and apricots; sprinkle in cranberries. Tie loin together with kitchen twine or heavy-duty string at 1½ inch intervals.

Roast until a meat thermometer stuck into the center registers 125 to 130. Start checking at about 1 ½ hours.) Remove from oven; raise oven temperature to 400 degrees. Brush loin with pan drippings, return to oven and continue to roast until the loin is golden brown and a meat thermometer stuck into the center registers 155 to 160 degrees, about 20 minutes longer. For even more attractive coloring, broil until spotty brown, 3 to 5 minutes. Let roast rest 15 to 20 minutes, transfer to a carving board. Stir juice around pan to loosen brown bits. Pour through a strainer into a small pan, and stir in port, chicken broth and remaining 2 T of jelly; bring to a simmer. 1x cornstarch with a couple of T of cold water; whisk into sauce. Simmer until lightly thickened. Slice port and serve with a little sauce.

## December Birthdays

Ted Clack	3
Bill Grey	4
Nancy Blake	6
Jackie Campbell	11
Cathy Seibert	21



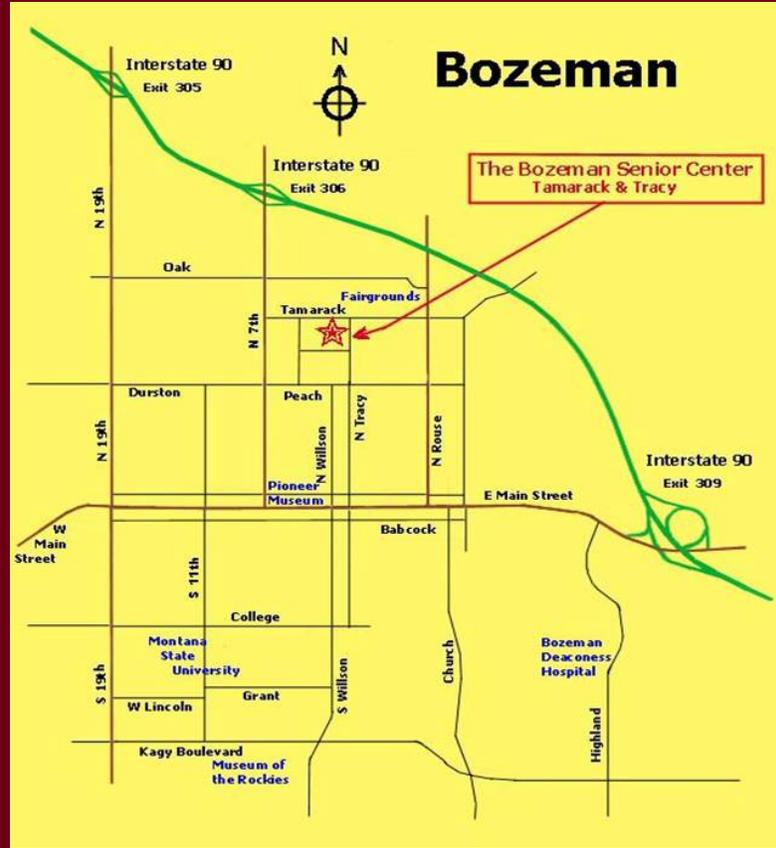
Elena Kalinina 21  
 Kara Schile 22  
 Ross Winton 24  
 Sue Brumfield 26  
 Lucy Cook 30

**Mary Burrow's Shower**

Following are a few pictures of Mary Burrow's Baby Shower. Sean and Mary's little girl was due November 26. Hang in there Mary!



*For directions to the Christmas party, please see below.*



*Once again, it has been great working for all of you this year. We wish each of you a very Merry Christmas and a Happy New Year! Tamara, Courtney, Joanna and Irene*