



Burrows receives the Northern Pulse Growers Association Research Excellence Award



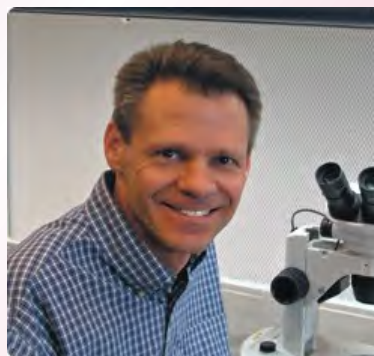
Dr. Mary Burrows received the 2014 Research Excellence award from the Northern Pulse Growers Association at their annual meeting in Minot, ND on 28 January, 2014. She was unable to attend, but Dick Fulton, a grower from Richland, MT, accepted on her behalf. He said in his acceptance speech that

“Without producers

like me, Mary wouldn't have much to do.” This is a misnomer, because Dick is an excellent producer and a member of a group of farmers who established pulses as viable crops in Montana. He received the Producer Achievement award from NPGA this year. In fact, all of the award recipients at the North Dakota meeting were from Montana. However, bad things happen to good producers. Dick and Mary first met when he was able to provide her with 100 lbs of lentil seed infected with *Ascochyta* blight at a level of 20%, which has served as the inoculum for numerous field trials. It also served as the seed lot on which Laurie Neuman, a former undergraduate in PSPPP, tested fungicide seed treatments for efficacy against *Ascochyta lentis*. That work will be published shortly in Plant Disease Management Reports. Dick also helped Mary and Dr. Michael Wunsch (NDSU-Carrington) to create a disease situation by planting lentils next to infested stubble. We then tested whether fungicide strips could prevent movement of *A. lentis* into an adjacent crop. The answer was no, the fungus spread from stubble over 300 m into the new crop. This

type of research is really important where pulse acres are expanding into land that was normally left fallow, and with the likely inclusion of the Pulse Health Initiative in the 2014 farm bill, we can anticipate that pea, lentil, and chickpea acres in Montana will continue to increase. Mary, of course, is excited about the potential for another disease epidemic. Let's hope she continues to be disappointed. Congratulations Mary!

Bill Hoch Recognized by MT Nursery and Landscape Association



Dr. Bill Hoch

Bill Hoch has received the Montana Nursery and Landscape Association Member of the Year Award for 2014. This award was given in recognition of Bill's support of the MNLA Certified Plant Professional

program and for furthering the education of MSU students through this program. Congratulations Bill!

Student Horticulture Award By Tracy Dougher

The MSU Horticulture Faculty has named their American Society of Horticultural Sciences (ASHS) Collegiate Scholars and Outstanding Undergraduate Student Award for 2013-2014.

The prestigious ASHS Collegiate Scholars Award honors the top juniors and seniors in horticulture from all over the United States. This year's MSU awardees are:

Lee Barbisan
Justin Bartels
Heather Begger
Joshua Brewer
Patrick Certain
Ben Dhiman
Hannah Estabrooks

Jace Kimmet
Hannah Manthey
Joshua Pecukonis
Scott Samson
Kia Simshaw
Samantha Jo Smith
Jamie Sowell



Hannah Estabrooks

The ASHS Outstanding Undergraduate Horticulture Student Award, recognizes an elite group of students from across the US for their academic, leadership, and service achievements. This year's MSU recipient is Hannah Estabrooks.

Hannah is an outstanding student, holding a high GPA while sharing her devotion to horticulture and horticultural knowledge. Hannah is also giving of her time to her university and community. She has volunteered on a native plant research program over the past two years, putting in many hours weeding, seed cleaning, mowing, and data collection all to learn more about research and native plants. She was a teaching assistant for two different horticulture courses and served as an Ag Ambassador, recruiting future horticulture students and speaking with many high school students. Hannah started a Turfgrass Club at MSU and spearheaded fundraising efforts to get club members to the Golf Course Superintendent's Association of America annual meeting, while working several seasons with a local country club. She is now exploring options for graduate school.

Recipients of both these awards will receive a certificate from ASHS and their names appear in the April issue of the *ASHS newsletter*.

Congratulations to all of you!

Justin Runyon wins Presidential Award

In late December, I learned I had received the Presidential Early Career Award for Scientists and Engineers (PECASE). This award recognizes scientists early in their careers (within five years of finishing a PhD), and I will be receiving the award at the White House sometime this year. Although this was awarded to me, I can't take all the credit. I've done few things in science that weren't the result of collaboration, and I've been

lucky to learn from and work with some great people.

Research began for me at MSU with the wheat stem sawfly. From 1998-2003, I worked on sawfly biocontrol and chemical ecology as a grad student and then as a research associate in David Weaver's lab. David encouraged me to publish early and often. I submitted my first paper as a master's student and was rudely introduced to peer-review: the editor redacted most of one reviewer's comments stating "these are not the types of comments the journal condones". This paper was published (in the same journal) as were nine others from this time. This work would not have been possible without help from many people at MSU.

In 1999/2000, I took Mike Ivie's insect identification and morphology courses and was immediately hooked on taxonomy. Mike noticed my interest and invited me to help inventory an island in the West Indies. This trip turned into quite the adventure thanks to Left Hand Lenny, a strong Cat 5 hurricane. For Mike's morphology class students were tasked with choosing an insect to illustrate and Richard Hurley suggested I draw a long-legged fly (family Dolichopodidae). Luckily, Rich took me under his wing and taught me the ins and outs of fly taxonomy. Together we searched for new species and published papers describing them. Sadly, Rich passed away in 2008, but I was able to honor him in 2010 when I named a new fly genus: *Hurleyella*.



Justin Runyon, Mike Ivie and Tony Murray (Irish ornithologist) waiting out Hurricane Lenny.

In 2003, I left to pursue a PhD at Penn State in plant-insect chemical ecology. I was fortunate to work with and learn from some of the world's best chemical ecologists at

Penn State. While there, we discovered that parasitic plants (*Cuscuta*) find and choose among potential host plants by smelling them – a finding that received much media attention (e.g. NYTimes, NPR, Science Channel, PBS).

In late 2008, after completing my PhD, I returned to Bozeman as an entomologist for the US Forest Service. I am applying chemical ecology to management of issues from biocontrol of weeds to bark beetle-wildfire interactions. My lab is on campus (next to the police station). I'm back to working on flies in the Montana Entomology Collection and back to collaborating with some old and new faces at MSU – thank goodness, because I've done few things in science that weren't the result of collaboration.

Currently, I am an entomologist with the Rocky Mountain Research Station, Associate Curator of Diptera in the Montana Entomology Collection and an affiliate in PSCP. Contact: jrnyon@montana.edu



Justin in the Forest Service greenhouse on campus (photo: Kelly Gorham/MSU)

2013 Forage Legacy Scholarships By Larry Holzworth

Susan J. Massar and Jeremiah M. Jansen received the "2013 Forage Legacy Scholarship" on December 10, 2013. Susan is a junior majoring in Crop Science. Jeremiah is a sophomore majoring in Animal Science.

The 2013 Forage Legacy Scholarship is given to the student who develops the best ranch plan as part of an exercise applying the knowledge gained in their AGSC 342 class to improve the productivity of a farm or ranch. The competition is a

part of a class term project assignment. AGSC 342 is offered through the College of Agriculture, Plant Science and Plant Pathology Department.

The scholarship is funded by royalties from the sale of protected forage cultivars released from the Montana Agriculture Experiment Stations, College of Agriculture.

Congratulations Susan and Jeremiah!



Larry Holzworth awarding the Forage Legacy Scholarship's to Susan Massar and Jeremiah Jensen.



Blake Starts Post Retirement Contract



Dr. Tom Blake

Dr. Tom Blake retired from MSU at the end of 2013, following 30 years of service to the institution.

During that time, Tom has released numerous malt, feed and forage barley varieties such as Hockett, Craft,

Haxby, and Hays. Starting this year, Tom is managing the barley improvement program on a post retirement contract and will spend more time with his wife, Victoria, and with their specialty malting business.

Miller Accepts New Position

After the retirement of Mal Westcott in early 2013, Montana's longest running research center in Corvallis, Montana, was briefly without a research scientist. The future of the station was in doubt. Those doubts were recently put to rest with the hire of a new superintendent/professor one year later.

Dr. Zach Miller, a former post-doc in PSPP and currently research professor in LRES, has accepted the position as Assistant Professor of Horticulture and Superintendent at Western Ag Research Center. "I'm looking forward to addressing the unique and diverse needs of the agricultural producers in western Montana. I know that I will bring the resources needed to grow an active research and extension program that serves what has been, at least in recent history, an underserved community", states Dr. Miller.



Zach Miller speaking with a grower from Plains, MT.

The research center in Corvallis was originally established in 1907 to focus on improving horticultural production. With this hire, the center will be renewing this focus. Production of high-value, specialty crops including apples, cherries, grapes, other fruits and vegetables is a growing industry across the state and especially in the Bitterroot and Flathead regions. According to Dr. Miller, "These producers have a real need for locally adapted solutions to ensure the viability and profitability of their operations.

Those needs were the driving force behind the creation of this position."

Pacific Northwest Wheat Quality Council meeting, Portland, Oregon

By Deanna Nash

During the week of January 20, 2014, I attended the annual joint meeting of the Pacific Northwest Wheat Quality Council (PNW-WQC) and Western Extension Research Activities (WERA) section 1009 meeting in Portland Oregon. This PNW-WQC organization is a nonprofit council comprised of wheat breeders, cereal chemists, producers, marketers, inspectors, processors and users of wheat. Through its technical committee of volunteer collaborators, the council aims to solicit and evaluate advanced-generation wheat breeding lines, thereby providing direct feed-back as to the merits of individual breeding lines and information on end-use quality. The meeting also included wheat industry tours, technical presentations and state reports.

Key points listed in the 2013 WERA section 1009 Montana state report are research efforts by Jack Martin, Mike Giroux and new wheat variety releases by the MSU spring wheat and winter wheat breeding programs. Listed are Phil Bruckner's 2013 winter wheat releases of the following varieties; Warhorse (MTS0808) - hard red winter, high yield potential, high stem solidness, low cutting by wheat stem sawfly, resistant to prevalent races of stem and stripe rust, Colter (MT08172) - high yielding hard red winter similar in grain yield and most agronomic and end-use quality characteristics to Yellowstone with improved test weight and stem rust resistance & WB3768 (MTW08168) - high yielding hard white winter similar in grain yield and most agronomic and end-use quality characteristics to Yellowstone, with low PPO. Information for Luther Talbert's 2014 spring wheat release MT1172 & CAP400 (Creston) was made available.

AMTOPP Annual meeting

By Laurie Kerzicnik

Linnea Skoglund, Toby Day, and I attended the annual AMTOPP (Association of Montana Turf, Ornamental & Pest Professionals) conference at Fairmont Hot Springs Resort on Jan 27-28. Whitney Cranshaw, Extension Entomology Professor from Colorado State University, was the keynote speaker, and he discussed hot topics like woody plant infestations in the West, Emerald Ash Borer, and aphids and mites. He certainly made the

meeting entertaining and worthwhile, especially because he gave several informative entomology talks. Toby gave an excellent and well-attended talk about Weed ID in Lawns. He was also able to pass out and advertise the Weed Seedling Identification Guide for Montana and the Northern Great Plains which was put together by Hilary Parkinson, Fabian Menalled, and Jane Mangold. Linnea and I both did round table discussions the last day for ornamental plants and spiders, so were able to spread the word about the Schutter Diagnostic Lab.

TCAP Graduate Student Workshop & XXII Plant and Animal Genome
By Afaf Nasseer, Andrea Varella, and Roshan Acharya

When we learned that the three of us were selected to attend a conference in San Diego, needless to say, we were very excited. In fact, it was the first time we were invited to a conference, and it was such a relief to escape the cold weather of Bozeman. We left Montana on January 9. The best thing is that it was like summer in San Diego and wow, we could walk in the street wearing shirts. On January 10, we walked to the mall in the morning and attended the TCAP Graduate Student Workshop in the afternoon. The theme of the workshop was "*You have your degree, now what?*" led by Jamie Sherman. Plant breeding experts representing both the private sector and academia shared insights about knowledge, experiences, and skills needed to become a successful breeder. It was a great opportunity to network with potential employers as well as to meet other TCAP students. We observed the diversity in issues and methods regarding the study of plant breeding and genetics among the T-CAP students and related scientists.

From January 11-15, we attended the XXII PAG. Each one of us had the opportunity to see great presentations about our subject of interest, such as "Plant Interactions with Pests and Pathogens", " Genomic Selection and Genome Wide Associations", "Ecological Genomics and Development of Environmentally Resilient Crops" and "Plant breeding in moisture stressed environment and genotyping". We gathered lots of useful information and new knowledge. Sunday, the 12th was a busy day at the TCAP conference. We listened to many interesting talks during the day. By late afternoon, we had presented our posters and explained our research and findings to professors, scientists, industry people and other students. It was a great experience! At night we enjoyed a nice dinner with Luther Talbert, his wife Hope, and Nancy



Afaf Nasseer, Andrea Varella, and Roshan Acharya with the posters they presented.

Blake. For the next three days we attended many more interesting talks. To fully enjoy our first visit to San Diego, we spent a couple more days enjoying the beach, the San Diego Zoo, Old Town, Coronado Island, Sea World and most importantly the SUN. As expected, we had a great time.

2014 MSU Crop and Pest Management School
By Kevin Wanner

The Crop Pest Management School was held January 2-3, 2014 in the Burns Telecommunications Center with 39 participants. Following is a list of the speakers and their topics for this year's school:

Ed Davis - *Weed Management Update*

Fabian Menalled & Jane Mangold - *Current and Future Challenges to Managing Cheatgrass*

Daren Mueller - *Fungicide Resistance*

Daren Mueller - *On Farm Research*

Menalled, Mangold & Burrows - *Research and Educational Needs*

Perry Miller - *Cover Crops*

Kent McVay - *Crop Rotation*

Barry Jacobsen - *MT Seed Potato Industry*

Kevin Wanner - *Insect Update*

Gadi V.P. Reddy - *Entomology Research at WTARC*

Cecil Tharp - *Pollinator Safety*

Michelle Erickson - *Corn production*

Clain Jones - *Forage Nutrient Management*

Course Focus
HORT 131 – Landscape Design History & Theory
by Jennifer Britton



"It is only in appearance that time is a river. It is rather a vast landscape and it is the eye of the beholder that moves."
~Thornton Wilder

Jennifer Britton, MLA We can look at history as a linear progression or we can examine our cultural past as if it behaves like a web, with threads weaving, touching, intersecting and turning, only to momentarily confluence. For me teaching landscape design history as a sequence of dates and figures to memorize was a sure remedy for insomnia and it's probably not a good idea to nap in front of a class of students! Therefore, to introduce students to our ever changing relationship with landscape and place, HORT 131 Landscape Design History & Design builds upon historical thematic "threads," demonstrating the influence past ideologies have on our physical environment today. For example, during one "thread", we explore how sacred and philosophical views during the Enlightenment period led to the Rural Cemetery Movement, which in-turn influenced the father of Landscape Architecture, Frederick Law Olmsted (you might know him as the designer of New York's Central Park). Both played pivotal roles in the establishment of parks and more importantly National Parks, and in turn this progression underpins the Wilderness Movement and the regulations for environmental protection. There are sixteen chapters in the required book *Landscape Design: A Cultural and Architectural History* and we work our way through the book not in chronological order but in these thematic threads. Pertinent articles, in print and on the web, augment the readings. My hope in this approach is to connect students to landscape in a meaningful, relevant way.

The intellectual intent of the course is broad in scope and reasonably deep in investigating the evolving practice of landscape architecture/design profession. In order to develop a broad view and perspective the course is about sharing, developing



Earth Art Class Project outside Linfield Hall, Fall 2013. Photo by Jennifer Britton.

and obtaining knowledge at a variety of scales and in various contexts. To accomplish a multi-sensory teaching approach students experience a variety of media and most lectures incorporate music, taste, touch and scent. We also have a series of field trips to explore locations and concept in situ including Bozeman's very own "rural cemetery" Sunset Hills Cemetery, where students try their hand at cemetery stone rubbings and exploring the meaning of iconographic symbols on headstones. Beyond traditional quizzes (yes, there are a few dates/names students need to memorize!), students also engage in two narrative short assignments in which they demonstrate important traditions, movements and key designers through creating a 1) Landscape Mask and 2) Postcards from a National Park. Students also participate in a Research Case Study, an analysis of design precedent through a PowerPoint Presentation & Case Study paper. And just to keep people on their toes, I have an historical lie in every class that, if caught, results in me throwing out a cool refreshing Peppermint Pattie prize!

The class meets every Fall Semester for lecture class twice a week on Tuesday and

Thursday from 10:50-12:05, and the class size averages 20-30 students, small enough that I am able to know every student in my class. Although it is a required course for the Environmental Horticulture Landscape Design students, enrollment includes many students from other majors and with diverse perspectives comes lively discussion!

New Employees

Ryan Quire - Montana State Seed Testing Laboratory

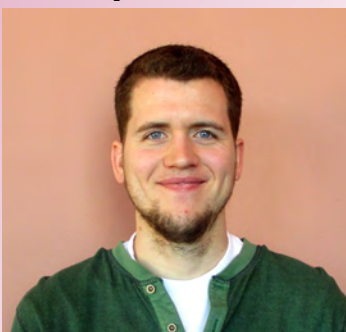


I'm really excited to join the PSPP Department as the Seed Lab Coordinator for Montana State's Seed Lab. After graduating this past May with my Master's degree, I worked for a local environmental consulting

firm, gaining a wide range of valuable field botany experiences. Although the position was very rewarding, I was happy to find a job working with MSU again. I'm looking forward to expanding my knowledge in seed identification and analysis and making new connections within the University. I plan to spend my free time skiing, camping, hiking, and enjoying every minute living in this beautiful place. Hopefully I'll get to meet each of you at some point soon!

New Graduate Student

Jakob Kammeraad (Mike Giroux and Jack Martin)



My name is Jakob Kammeraad. I recently enrolled in the Plant Science Masters Program, under the advisement of Dr. Giroux and Dr. Martin. Prior to Graduate School, I completed MSU's Plant Biotechnology Bachelors

Program in spring 2013. I first transferred to Montana State University in 2009, after obtaining an Associate's degree at Bakersfield College in Bakersfield, CA. Having been raised in Idaho, I came to miss the Rockies and was eager to move out of California. It was not difficult to fall in love with Montana, and my family is excited to call Bozeman our home.

With no desire to leave Montana, my wife and I decided to start a family. On January 22, 2013 she gave birth to brother/sister twins. Their names are Bennett Lorne and Rory Flynn. You

may see them from time to time in the department, and don't hesitate to say hello.

Invited Talks

Barry Jacobsen. Lovell, WY. Sugarbeet Research. 12/18/13.

Barry Jacobsen. Fargo, ND. Sugarbeet Research Reporting Session. 1/13/14.

Barry Jacobsen. Longmont, CO. Sugarbeet Research. 1/20/14.

Dunkel, F.V., R. Klein, K.P. Luong. Austin, TX. Grown in Montana repellents: from traditional ecological knowledge to *Aedes aegypti* laboratory studies. Entomological Society of America annual meetings. 11/9/13.

Michelle Flenniken. Vancouver, BC. Honey bee research. 2/26/14.

Publications

Loneragan, E. and Cripps, C.L. 2013. Use of a low nitrogen fertilizer as a strategy for maintaining mycorrhizal colonization on whitebark pine seedlings inoculated with native fungi in the greenhouse. *Native Plants Journal* 14(3): 213-224.

Grants

N. Weeden, "Genetic investigation of the gene (s) on pea chromosome 2 providing tolerance to Fusarium root rot from accession P1220174." USA Dry Pea and Lentil Council. \$21,285.00.

Dunkel, F.V. and C. Montagne. "College of Agriculture Indian Education For All Faculty Fellowship program". MSU College of Agriculture, MSU Department of Land Resources and Environmental Studies, and MSU Department of Education. \$3,000.

Flenniken Students Awarded Fellowships

Two undergraduate students in Michelle Flenniken's lab were awarded fellowships to support their research. Both will attend the American Society for Virology Conference this summer.

Emma Garcia - Presidential Emerging Scholars Award

Madison Martin - McNair Research Fellowship

Making the Right Choice for Valentine's Day

By Toby Day, Extension Horticulture

Valentine's Day is just around the corner. However, I admit that I am not a big fan of all things romantic on February 14. Maybe it's because it has become so much of a

"Hallmark holiday." It could have something to do with an article I read about the origins of Valentine's Day that was, well disturbing. (If you want to ruin your impression of Valentine's Day, go to an NPR article from Arnie Seipel, (<http://www.npr.org/2011/02/14/133693152/the-dark-origins-of-valentines-day>). However, I don't recommend it.

I know that I am in the minority on this issue. According to Seipel, Valentine's Day sales of cards, jewelry, gifts and flowers topple \$18 billion per year. The bright spot for me is that many people buy their sweeties flowers. Yep, it's good thing that hopeless romantics support my industry during its slower times. February wouldn't normally be a hot time for plant sales without Valentine's Day! So, if you are a romantic, and I know that most of you



Sending yellow roses to a person you love may be sending the wrong message as it commonly meant as friendship, nothing more.



If you have a "perfect love," maybe you want to give them tulips instead of roses.

are, here are some flowers commonly given during this, the most romantic of all holidays. The description and meaning of flowers, called floriography, largely became popular in Victorian times. Flirtation, actually anything to do with even talking to the opposite sex was deemed unacceptable, especially in Queen Victoria's upper class. One way to convey a message to someone you were interested in was to send a particular type of flower or arrangement. Just for fun, I have included the meaning of each flower so you can pick the right flower for your romantic situation.

Courtney Gets Married!

Courtney Speegle married Gordon Johnson on January 11, 2014. Their wedding took place at Courtney's Grandparents' cabin fifteen miles north of Butte. They had planned for an outdoor wedding, but due to blizzard conditions, the wedding was held indoors. During a five minute window in the blizzard, this picture was taken.



Gordon and Courtney Johnson

Gordon and Courtney are in the process of moving to Juneau, Alaska, where Gordon has been hired as a pastor and Courtney will be getting everything situated in their new home.

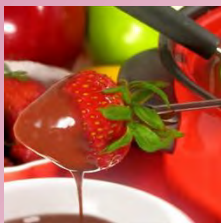
Flower	Meaning
Lilies	Devotion
Tulips	Perfect love
Gerbera	Innocence
Daisies	Perseverance
Orchids	Delicate beauty
Gardenias	Joy
Freesia	Spirited
Hyacinths	Sincerity
Callas	Magnificent beauty
Roses	Red=romance, beauty, perfection Pink=elegance, joyfulness Yellow=joy, friendship, warmth, happiness White=innocence, purity, honor, reverence Orange=desire, enthusiasm, passion, excitement Lavender=enchantment, love at first sight

Congratulations to both of you! We wish you all the best!

Recipe of the Month

Chocolate Orange Fondue

1 1/4 c heavy cream
3 T freshly squeezed orange juice
12 oz dark chocolate chopped (at least 70% cocoa)
1 T grated orange zest
1 t orange liqueur



Heat the cream and orange juice in a saucepan over medium heat until it starts to bubble at the edges. Remove from the heat, and immediately whisk in the chocolate, orange zest, and orange liqueur until smooth. Serve in a fondue pot over the lowest heat setting.

February Birthdays

Jeff Johnston	2
Linnea Skoglund	10
Carmen Pol	14
Alan Dyer	15
Phil Bruckner	17
Aryal Niranjana	22
Pam Szelmezcza	23
Hwa-Young Heo	24

