



Farewell to Jessica Rupp, Myron Bruce, Nar Ranabhat, and Dylan Mangel

Jessica Rupp has accepted a position as an Assistant Professor in the Department of Plant Pathology at Kansas State University. She will be the applied wheat pathologist.

Jessica wants to convey the following message to all faculty staff, and students, "I have been honored to work among you for the past three

years. Whether we have collaborated or just talked during coffee, you have all had an impact on my career. MSU has been a tremendous experience for me and my crew. We've experienced ups and downs, successes and failures, and we've killed a lot of plants. Thankfully, the last part was on purpose! While it is exciting to return to my alma mater and wheat roots, I have enjoyed forming close relationships with growers and ag staff across the state. My first day at MSU was spent on the back of the beet digger at SARC. I will be ending the same way when I return to harvest my trials this fall. My time at MSU will have truly come full circle. While I may be moving a short 16 hour drive away, I hope that we can stay connected through collaborations and friendships. If any of you are ever in Manhattan, Kansas, I know where all the best french fries are—we'll show you the town. Take care and best wishes!"

Jessica is delighted that Myron Bruce is accepting a position as a Research Assistant Professor in the department and will be housed in the Rupp Lab. Nar Ranabhat, who has been a technician in the Rupp lab for 1.5 years will be joining as a Ph.D. student, as will Dylan Mangel who recently defended his M.S. here in this department. Long-time KSU research scientist Mark Davis will be remaining with the applied wheat pathology program at Kansas State.



Jessica Rupp, Myron Bruce, Nar Ranabhat, and Dylan Mangel

Jessica commented, "He seems patient enough to teach me to drive the combine and accept a whole herd of Montana folks into the fold. His life will undoubtedly become more chaotic and crowded in the coming month!"

Best wishes to all of you; you will be missed!

NOTE: The vice-Rupp position is now being advertised at <https://jobs.montana.edu/postings/13127>.

Instructor Joins Landscape Design Team **By Chris Keil**



I am excited to be teaching the Sustainable Landscape Studio (Hort 201) this coming fall semester. With nearly ten years of professional

landscape architecture experience and several more years in the field of hands-on native plant restoration, I am now looking forward to helping students grapple with topics of landscape sustainability.

In addition to this position at MSU, I am currently working at DHM Design, a small landscape architecture firm here in Bozeman, where I am engaged in a variety of public park design and ranch planning projects throughout the Northern Rockies. I hope to draw from professional practice to create scenarios and exercises that will prepare students for their future careers. Before coming to Montana, I worked and lived in New York City where I was involved in coastal resiliency planning and habitat restoration in urban areas, commonly with tidal wetland restoration components. During my graduate studies, I focused on ecological analysis and

restoration, specifically as it relates to the interaction of water and landscape. During this time, I also served as a teaching assistant for plant identification and establishment courses. This role increased my desire to teach in the future and share my experiences with aspiring landscape designers. I am grateful to have that opportunity this fall. In my free time and as a professional, I love studying native plant communities and am committed to becoming more familiar with the vegetation of Southwest Montana. I also enjoy the many outdoor pursuits this beautiful area has to offer including skiing, mountain biking, and fishing.

PATHS Interns Forge a Pathway in Plant Sciences to Health **By Florence Dunkel**

It was the second summer of the USDA NIFA PATHS Program, or Pathway through Agriculture to Tribal Health and Food Sovereignty. Each intern spends 18 months in the program; only two summers is on the MSU campus or in Washington D.C. and the rest of the internship is in their own community with their own tribe, conducting research to answer complex problems.



From left: Dr Holly Hunts; Josiah Griffith; Dr. Florence Dunkel; Erin Riley; Holly Reed; Thedra Bird Rattler; Daniella Antelope; Megan Begay (E. Riley's intern); Dr. Ariela Zuckerman; Dr. Hiram Larew at USDA NIFA, Washington DC following intern presentations (not pictured, Winter Old Elk)

There was a productive exchange of ideas between the four PATHS faculty (David Sands, Ed Dratz, Holly Hunts, and Florence Dunkel), a seasoned entrepreneur and community organizer (Claire Baker Sands), and eight tribal college/MSU interns including students from the Apsaalooke, Bannock, Amskapi Pikkuni, and Navajo tribes.

Holly Hunts, a family consumer scientist and Associate Professor in the Health and Human Development Department, is the Project Director. In addition to doing all the paperwork, she also led Cohort 1 (interns for 2017-18) on an amazing speaking and learning tour of Washington D.C. and surrounding areas. Meanwhile Dave and Ed along with Claire held the encampment with Cohort 2 (interns for 2018-19) in 108 PBB and nearby locations.

In D.C. Cohort 1, interns Winter Old Elk, Danielle Antelope, Holly Reed, and Thedra Bird Rattler told their story both formally and informally to 16 groups over four days. The formal presentation at the USDA National Institute of Food and Agricultural was attended by about 40 people, program officers and their staff. We met individually in the congressional offices with the tribal aides for Senator Jon Tester, Senator Steve Daines, Senator Heidi Heitkamp of North Dakota, and Representative Greg Gianforte.

Meanwhile back in 108 PBB, Cohort 2, guided by Ed and Dave, grew traditional Native American food plants, planned their field trip to Fort Belknap, and formed their 11 month community-based research project.

Mission accomplished: Eight tribal students with research underway or internships completed and five new tribal college students with a research mission at the nexus of plant sciences and health, and equally important, four faculty and one community organizer just a bit more decolonized and culturally astute!

The American Phytopathological Society (APS) Pacific Division Meeting **By Carmen Murphy**

June 25-27 was the annual meeting of the APS Pacific Division Meeting, held in Portland, Oregon. In attendance from MSU were Dr. Mary Burrows, Dr. Jessica Rupp, Valerie Smith, and Carmen Murphy. Monday was a field trip to the Tualatin Valley to see the Cornelius and Forest Grove agriculture areas with vineyards, berries, and hazelnut orchards, canker diseases, charcoal rot, botrytis on fruit, and a number of root rots.

Tuesday morning was a symposium on foliar diseases that lurk below-ground where we were educated on the current status of a number of fungi, oomycetes, nematodes, and



From left to right: Dr Mary Burrows (MSU), Dr Julie Pasche (NDSU), Dr Weidong Chen (USDA ARS), and Dr Ashok Chanda (University of Minnesota)



Root rot in raspberries in the Tualatin Valley

viruses affecting forest trees, grape vines, almond trees, and other plants of economic importance in the Pacific area. The graduate student presentations saw both domestic and international students presenting on a large variety of diseases affecting agriculture, forest systems, turf grass, and even the florist industry. The benefit of attending this conference was seeing such a wide variety of research topics that represent economic importance in other areas of the country and internationally. It was an eye opening and refreshing experience.

Valerie Smith, Research Associate at the Southern Agricultural Research Center, presented work from sugar beet research in Huntley at the poster session Tuesday evening. Other authors included Myron Bruce, Barry Jacobsen, Ken Kephart, and Jessica Rupp. On Tuesday night we had a delicious banquet and socialized with new and familiar faces.

The presentations continued on Wednesday morning. MSU graduate student Carmen Murphy presented her research about detection and location in the field of *Aphanomyces* root rot on peas and lentils in Montana, PI Mary Burrows. Wednesday afternoon wrapped up the conference with a diverse topic range, with special interest topic IPM for plant pathology, and the concept of thresholds for pathologists. After the afternoon session it was off to the airport to head back to Bozeman, to continue our cereal, pulse, potato, and beet research.

Towne's Harvest Garden President's Lunch

By Elisa Boyd

Towne's Harvest Garden, located on MSU's Horticulture Farm, is comprised of about three acres of diverse vegetables and cover crops. This research and teaching farm offers community supported agriculture (CSA) shares, two farm stands, and donates produce to the Gallatin Valley Food Bank.

Every year Towne's Harvest Garden hosts the President's Lunch in the grove of the



Marcy Gaston introducing the Culinary Marketing: Farm to Table class.



Centerpieces and appetizers grown and prepared by Culinary Marketing: Farm to Table and Towne's Harvest Garden Summer Practicum students.

Farm. Students from the Sustainable Foods and Bioenergy Systems Summer Practicum and Culinary Marketing classes collaborate to bring dishes made from local ingredients and produce grown at Towne's Harvest to the table for faculty and staff invested in the SFBS program, including Waded Cruzado.

Dishes this year followed a Moroccan theme and included: Lentil humus with cucumbers and radishes, lamb, beet stew, Montana Harira, as well as Moroccan spiced carrot and beet cake. Students also put together arrangements for the tables from flowers grown on the farm.

Students in the SFBS summer practicum spend over ten hours each week on the Farm engaging in daily farm activities. By the end of the course, students understand safe harvest and handling procedures, production concepts including crop variety selection, weed identification and management, and soil fertility management. Students in both the practicum and culinary marketing participate in the weekly CSA distribution and two farm stands. Culinary marketing students focus on preparing and preserving seasonal produce.

We welcome everyone to come out and visit Towne's Harvest Garden and see the hard work these students have put in over the summer.

Pollinator Symposium By Michelle Flenniken

On August 9, the MSU Pollinator Health Center will host a Pollinator Symposium in the Weaver Room of the Emerson from 6:30 - 8:30 pm. This event will feature short research talks by MSU graduate students, a presentation and short films by nature photographer Clay Bolt, and a Q&A session with local bee experts including Co-directors of the Pollinator Center Laura Burkle and Michelle Flenniken.

Grants

Greg Chorak, Aquatic Plant Management Society, "Identifying Eurasian and hybrid watermilfoil gene expression differences in response to frequently used herbicides for improved adaptive management".

Regarding the above Grant: Student initiatives are among the most important core values of the Aquatic Plant Management Society. High on the list of student support programs is the Graduate Student Research Grant (GSRG) offered by APMS in the area of aquatic plant management and ecology. This academic grant is co-sponsored by APMS and the seven regional APMS chapters: Florida, MidSouth, Midwest, Northeast, South Carolina, Texas, and Western. This grant is

awarded biannually for the most qualified proposal submitted.

Jamie Sherman, "Barley Breeding for Montana: Ensuring a stable malt supply", American Malting Barley Association.

David Sands, "Biocontrol of Field Bindweed and Canada Thistle", Organic Advisory and Education Council.

Mike Ivie, "Pine Shoot Beetle Trapping", Montana Department of Agriculture.

Mike Ivie, "Exotic Woodborer and Bark Beetle" Montana Department of Agriculture.

Hikmet Budak, "Acquisition of Goods and Services" U.S. Department of Agriculture.

Publications

Thum Publication Wins Award

On July 17, 2018, at the Aquatic Plant Management Society in Buffalo, NY, Ryan Thum along with his coauthors won an award for Outstanding Journal of Aquatic Plant Management Paper.

Thum, R., Parks, S., McNair, J. N., Tynning, P., Hausler, P., Chadderton, L., Tucker, A., Monfils, A. (2017). Survival and vegetative regrowth of Eurasian and hybrid watermilfoil following operational treatment with auxinic



Dr. Jay Ferrell, Editor in Chief of the Journal of Aquatic Plant Management, awarding Ryan Thum the Outstanding Journal of Plant Management Paper Award.

herbicides in Gun Lake, Michigan, USA. Journal of Aquatic Plant Management, 55, 103-107.

2018 multi-state Horticulture In-Service By Toby Day, Extension Horticulture Specialist

The MSU Schutter Diagnostic Lab and Extension Horticulture hosted the 2018 multi-state Horticulture In-Service in Missoula, Montana July 18-20. Extension agents, educators, specialists, and Master Gardeners from Idaho and Montana convened to increase their awareness of horticulture issues and techniques, as well as attend tours of horticulture interests and industries.

Noelle Orloff, Plant Identification Diagnostician, gave a presentation and hands-on demonstration on the modes of action of herbicides and their effects on different plant material. Her talk was followed by Eva Grimme, PhD, who presented on plant disease diagnostic kits for rapid diagnosis. The group was shown how to use the kits and their effectiveness for quick diagnosis in the field for diseases such as fire blight in pome fruit and TMV in tomatoes. The day finished up with a tour and discussion at the Missoula County Extension office with Sandy Perrin's (Missoula County) plant diagnostic lab.

On Thursday, the group went on a series of tours that included Garden City Compost, the Native Gardens on the campus of UM, the



Jason Duffin of Garden City Compost explains the complexities of producing high quality compost.



Toby Day giving a talk on cherry trees on the UM campus.



Eva showing the results of the rapid test to the participants.

Montana Conservation Seedling Nursery, the P.E.A.S Farm (Program in Ecological Agriculture and Society), and Garden City Harvest. There also was an IPM discussion tour of the trees on the Montana State Arboretum on the campus of UM.

The final day of the In-Service included talks from Kate Painter and Jennifer Jensen from the University of Idaho on organic pest management of gardens and orchards, a discussion about IPM recommendations from myself and Kimberly Tate of the

University of Idaho, and an informative talk from Laurie Kerzicnik, PhD, about spiders. The post tour included a tour of a half acre blueberry farm in Clinton, Montana (yes, you read that correctly, a blueberry farm!). I personally witnessed great looking blueberry plants and blueberries the size of nickels! – who knew?!?

I want to personally thank the Schutter Diagnostic Lab and especially Sarah Eilers for their help with coordinating this fun and educational event.

Recipe of the Month

No Noodle Zucchini Lasagna

2 large zucchini
 1 tablespoon salt
 1 pound ground beef
 1 1/2 teaspoons ground black pepper
 1 small green bell pepper, diced
 1 onion, diced
 1 cup tomato paste
 1 (16 ounce) can tomato sauce
 1/4 cup red wine
 2 tablespoons chopped fresh basil
 1 tablespoon chopped fresh oregano
 hot water as needed
 1 egg
 1 (15 ounce) container low-fat ricotta cheese
 2 tablespoons chopped fresh parsley
 1 (16 ounce) package frozen chopped spinach, thawed and drained
 1 pound fresh mushrooms, sliced
 8 ounces shredded mozzarella cheese
 8 ounces grated Parmesan cheese



Preheat oven to 325 degrees F (165 degrees C). Grease a deep 9x13 inch baking pan. Slice zucchini lengthwise into very thin slices. Sprinkle slices lightly with salt; set aside to drain in a colander.

To prepare the meat sauce, cook and stir ground beef and black pepper in a large skillet over medium high heat for 5 minutes. Add in green pepper and onion; cook and stir until meat is no longer pink. Stir in tomato paste, tomato sauce, wine, basil, and oregano, adding

a small amount of hot water if sauce is too thick. Bring to a boil; reduce heat and simmer sauce for about 20 minutes, stirring frequently. Meanwhile, stir egg, ricotta, and parsley together in a bowl until well combined.

Too assemble lasagna, spread 1/2 of the meat sauce into the bottom of prepared pan. Then layer 1/2 the zucchini slices, 1/2 the ricotta mixture, all of the spinach, followed by all of the mushrooms, then 1/2 the mozzarella cheese. Repeat by layering the remaining meat sauce, zucchini slices, ricotta mixture, and mozzarella. Spread Parmesan cheese evenly over the top; cover with foil.

Bake for 45 minutes. Remove foil; raise oven temperature to 350 degrees F (175 degrees C), and bake an additional 15 minutes. Let stand for 5 minutes before serving.

August Birthdays

Nancy Cooke	12
Swarnalatha Moparthi	14
Mike Ivie	16
Karen Maroney	23
Bright Agindotan	25
Ruth O'Neill	26
David Sands	30



The Turners Welcome Jack!



Congratulations to Garrett and Hannah Turner on the birth of their son Jack Ross Turner. He was born on Friday, July 20, at 1:23 a.m., weighed 8 lbs 7 oz, and was 22 inches long. He was named for two of his great grandfathers.

Congratulations to both of you!

Go to next page for photos of the Post Farm Field Day.

POST FARM FIELD DAY 2018



Clockwise: Emma Jobson, Mike Giroux, Justin Vetch, Durum plots, herbicide test plots, Jessica Rupp, Kevin McPhee, Phil Bruckner and Jim Berg.