Plant Science Says

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South American Sabbatical
By Mark Young

Ok…given the opportunity… what is your dream trip to combine work and pleasure, explore fabulous new environments, meet new people, and learn a new language along the way? Well for my wife and I, it was a five month mini-sabbatical in South America. The overall objective for my research was to investigate unexplored hot springs in the Andes for viruses and to compare what we find in these hot springs with what we have previously found in Yellowstone and other thermal regions worldwide. Linda's research focused on understanding the role of NGOs in acting as a middleman in allowing small agricultural producers access the world market. So loaded with only backpacks we head off to South America soon after Christmas (makes you feel like a 20 year old again!).

We started our trip in Bariloche which is small town located in Southern Argentina. Bariloche is a lot like Bozeman… Argentinean style. Bariloche is a 'way cool' mountain town surrounded by mountains, lakes and rivers that is a favorite resort area for the young, rich and famous of South America. We spent about a month in this town attending Spanish school full time (quite a shock for someone who is used to being on the other side of the teaching system!). On the weekends we would go hiking, fishing, or exploring active volcanoes looking for hot springs. With a little Spanish in hand we next headed further south to explore the Patagonia region of Argentina and Chile, eventually making it all the way the Cape Horn, the most southern piece of land before reaching Antarctica. It is truly an amazing part of the world that constantly bombards you with incredible landscapes.

Our next stop was Chile for about a month. We quickly learned that Chilean Spanish is quite different from Argentinean Spanish (it is much faster with lots of slang)… so it was back to Spanish school again. Afterword we headed off to the Andes located in central Chile in search of more hot springs. We were

Andes in Southern Chile

in the small mountain town of Pucon preparing to leave for a week long backpack trip. Food was bought and the backpacks were packed for leaving the next morning when the big terra motto (earthquake) hit at 3:30 in the morning. Having grown up in California, I thought I had experienced big earthquakes.. .was I ever wrong. This earthquake was the fourth largest earthquake recorded and totally terrifying. It went on for about three minutes. At the time, most of the locals thought that the volcano next to town was erupting… meaning we were all about to die. No one really knew what was going on. Of course all power and communications were lost. Finally the radio came back on the airways and we could listen to the news on cars radios and we learned that that the center of the earthquake was about 100 miles away in the area of the second largest town in Chile, Conception. I cannot imagine what the people at the epicenter of the earthquake experienced! It soon became ob-

vious that we were not going anywhere for a while, the roads were closed and there was no fuel, power, etc… so for the next week we were 'stuck' in this beautiful region of Chile. Not a bad place to sit out the effects of a major earthquake! I have to say that the Chileans did an outstanding job responding to the earthquake and I was amazed at how everyone became mobilized to help with earthquake relief. Finally we were able to get to Santiago were I had work at one of the universities. Even in Santiago the aftershocks were numerous and in general everyone was on edge about more earthquakes. During a multi-day sampling trip with faculty members from Catholica University in the Andes east of Santiago, we were hit by large aftershocks (the aftershocks were larger that the Haiti earthquake!) setting off numerous rock avalanches that blocked our planned return route to Santiago… off to Plan B!

Sampling in the Atacama

We left central Chile for northern Chile for exploration of the Atacama desert. The Atacama is a truly amazing place. It is a one of the driest deserts in the world (some areas have not recorded any rain for over 300 years), that is very high and rugged (we were often above 15,000'), large (larger than Montana) and nearly devoid of any visible sighs of any life. So with a four wheel drive, extra gas, food, camping gear, and a GPS we headed out looking for hot springs. While we did find some great hot springs (at 17,000'), the truly amazing part of being in the Atacama was the feeling of being in a truly remote part of the world and camping under a night sky that is beyond description with a bottle or two of wonderful Chilean wine!

From Chile it was off to Bolivia for the next month. Traveling by Bolivian buses (an experience by itself) we found ourselves in southern Bolivia and back in Spanish school. Bolivia is a fascinating country, full of con-

Exploring in the Andes in Bolivia

trast - engaging people but with a history of governments that have done little to improve the lives of their citizens (Bolivia has had 195 governments since independence in the 1820s!). We had the opportunity to visit one of the oldest operating mines in the world (over 500 years of continuous mining) where it is estimated that more that 8 million people died during the first 100 years of its operation by the Spanish. Eventually we found ourselves in the capitol, La Paz, lecturing at the university and sampling with university students at nearby volcanoes. We also had the opportunity to do a number of hikes in Bolivia ranging from high hikes in the Andes to hikes to the headwaters of the Amazon basin. After a short stay exploring the region around Lake Titicaca that forms the border between Bolivia and Peru (and recovering from being sick.. .one of the joys of traveling!), we traveled to southern/central Ecuador for more sampling and lecturing at local universities. We ended our trip with a two week hike in the Andes of central Peru which reminded us of our hikes in the Himalayas of Nepal 30 years earlier.

Like all good trips, the value is what one learns along the way that makes the lasting

Visiting floating islands in Lake Titicaca

imprints. It is the kindness and generosity of the people that you meet that is independent of their economic status. It is how hard most people work for really little financial reward. It is how strong and important family ties are in Latin America. It is how many truly beautiful places there are to explore in this world. It is how passionate scientists and students are in the world about their work and how enjoyable it is to share ones passions with others. Now that I am back in Bozeman, I hope that I can share this passion with my own students and colleagues and promote a broader engagement in the world we live in.

Progress on the MSU Hopyard
By Victoria Blake

The 2010 phase of the MSU hopyard is nearly complete. Unfortunately our Seattle weather caused us to postpone, then cancel the community 'Stringing of the Bines', but the barley crew took advantage of the dry days to throw about 350 strings using a spools of twine, fishing weights, good throwing arms and Grandma's donuts.

This year we completed sections for Northern Brewer, Mt. Hood, Early Cluster, Aromet,

Bradee and Kelly stringing Bines.

Snow on the hops

Hallertauer, Swiss Tettnanger and a N. American landrace. Cascade and Fuggles sections were filled last year (i.e. 40 plants) allowing us to begin to take some meaningful yield and quality data this year. Nearly all of the plants from last year came back but we did lose a few in all varieties except Fuggles. Early Cluster only grew back 5 of the original 20 we planted last year, and may be replaced if performance is as poor next year. Aromet, a wonderful aroma hop, is the most vigorous with bines already seven feet tall and flower buds developing in the leaf axils.

We ordered seven new varieties from the USDA's National Plant Germplasm System (NPGS) in Corvallis, OR. The new varieties will be Chinook, Crystal, Magnum, Nugget, Saazer, and Willamette. Magnum, a very high alpha acid (20%) hop, is used for very bitter and hoppy beers; Saazer is a traditional Nobel hop; and the others are used commonly in the craft brewing industry. These will arrive as rooted cuttings later this summer and the next wave of propagation and spider mite control will begin.

We are tentatively considering Saturday, September 18 for the Community Harvest. Please contact the Blake lab at anytime if you want to visit the hopyard before harvest. Cheers!

MSU Hopyard Map * To be planted in 2011

Nugget*	Saazer*	Magnum*	Crystal*	Chinook*
N. American landrace	Swiss Tettnanger	Hallertauer	Willamette*	Cascade
Fuggles	Northern Brewer	Mt. Hood	Early Cluster	Aromet

Road

***Dancing Across the Gap* premiers at USDA-Washington DC**
By Florence Dunkel

On May 25 and 26, Florence Dunkel and the New York producer presented their film supported by the USDA-National Institute of Food and Agriculture (NIFA) Higher Education Challenge Grant Program to NIFA program leaders and to administrators (deans and project directors) from Alaskan and Hawaiian Native American serving institutions. It was well received with many positive comments.

Dancing Across the Gap tells the story of three Native American women who travel from their Northern Cheyenne reservation in Montana to live in a Bambara subsistence farming village in Mali. Through this exchange, they each experience a profound reaffirmation of how traditional knowledge and cultural ways-of-knowing are essential to addressing contemporary issues in agriculture, family, and community.

This summer and fall, the film will air on Montana PBS. Check with Florence or Irene Decker for dates and times. The film is also being used at the Smithsonian Museum Native American for staff training.

The film was announced and distributed at annual meetings of the North American College Teachers of Agriculture (NACTA) at Penn State 22-25 June 2010. Fourteen institutions of higher education offered to evaluate the film with their students in courses in colleges of agriculture and related disciplines. These institutions include: the Ohio State University, Purdue University, Cornell University, Virginia Tech, University of New Mexico, University of Arkansas Pine Bluff, University of Illinois-Urbana Champaign, University of Wyoming, University of Florida, and University of California-Santa Ana.

One of the outcomes of the NACTA meetings was understanding how declining agriculture student enrollment in the U.S. could be solved by focusing on Colleges of Agriculture being "minority friendly." This would be a major effort in the 1862 Land Grant Universities, but could be linked to improving health awareness in minorities. Workshops for existing 1862 agriculture faculty could provide a more minority-friendly environment, and stronger linkages with 1994, 1890, and Hispanic Serving Institutions. This could lead to more minority enrollment in colleges of agriculture and a total increase in enrollment in US colleges of agriculture. The film, *Dancing Across the Gap,* provides faculty/administrators with a tool to bridge the gaps in understanding needed to effect these kinds of large changes.

Contact F. Dunkel (5065) if you would like to obtain a copy of the film (56 minutes movie plus background booklet, 14 segments for discussion and a 90 second trailer).

Peaks and Potential
by Peggy Bunger

If the students in the PBB were looking younger last week, they were part of MSU's Peaks & Potentials Program taking Dr. Kevin Wanner's class, "Going Buggy." Peaks & Po-

Kevin Wanner demonstrating a simple pitfall trap made from a 2 liter plastic bottle for collecting insects.

tentials is designed to give high-ability/high-potential students in grades 5-7 the opportunity to explore special topics of interest and work with experts in various subject areas. "Going Buggy" students collected insects from various habitats around campus using different trapping techniques. They preserved the insects for their collections and correctly identified the insects under the direction of Dr. Ruth O'Neil on Friday.

Kevin Wanner showing the P&P class how to collect insects with a sweep net.

Planting of Dr. Bob's Orchard

The first twenty-five fruit trees in Dr. Bob's Orchard were planted by the students in the Organic Market Garden Class on June 21. The apples, apple-crabs, plums, pears and cherries were donated by Roger Joy of Canyon View Nursery in Corvallis, MT. There is room for 17 more trees and Cashman's is offering a 30% discount to anyone interested in donating a fruit tree. In addition to the tree fruit, the orchard contains raspberries, hops, and a soon to be planted vineyard. Stop by the Horticulture farm for a walk through the orchard.

Taylor Steed, Jason Bishop, and Bill Szaz

Will Chandler, Kevin Shields, Hannah Sukut, and Darcy Swymeler

Karson Lucas and Hannah Sukut

Lee Oleson and Mike Arnold

Linnea Granted New Title

Linnea Skoglund recently requested and was granted the position of Research Assistant Professor in our Department effective July 1, 2010. As research faulty, she can be primary investigator for research grants and can serve on graduate student committees. Linnea joined the department June 1, 2009, as the plant disease diagnostician and Urban IPM coordinator, under the direction of Mary Burrows. She has her PH.D. in plant pathology from Colorado State University. Over the years she has carried out research programs on small grains , corn, turf, sweet potato and potato in Colorado, Africa and South America. Linnea also has over 15 years experience in diagnostics and extension. She is looking forward to working more closely with graduate students. This summer she is supervising Jackie Campbell in a diagnostic independent study.

President's List Spring 2010

Bryce Fischer
Chelsey Gilman
Rhiannon Spaw
Melanie Ippolito
Cassandra Peters

Dean's List

Kayce Flathers
Agatha Frisby
Erin Gunnink
Kelsey Huber
Kristen O'Brien
Delisa Pearson
Jamie Raznoff
Kristel Slifer
Charles Szasz
Thomas Wilson
Bethany Flikkema
Tara Gregorich
Ryan Haidle
Matthew McCabe
Sarah Payton
Charles Petranek
Valerie Riter
Anna Snapp
Jackson Walls
Taniquell Wilder

Congratulations to all of you!

Moya Wins Award

Ernesto Moya was awarded the E.L. Sharp Graduate Achievement Award. E.L. Sharp was the first Head of the Plant Pathology Department and an endowment fund was established in his honor upon his retirement in 1986 to honor outstanding achievements by a graduate student in Plant Pathology. The student must by nominated and voted on by Plant Pathology. Ernesto is being honored for his accomplishments while earning his doctorate under the supervision of Dr.'s Barry Jacobsen and Alan Dyer, working on distribution and interaction of fusarium crown rot and common root rot pathogens of wheat in Montana and development of an integrated management program for fusarium crown rot. He is returning to his native Chile, where he has a job as an Assistant Professor in Plant Pathology at Austral University. Ernesto's name will be added to those of previous winners on a plaque in Rm 327 PBB and awarded a cash prize of $500. Congratulations from the entire PSPP Department, Ernesto, on a job well done.

Field days

Huntley	July 7	SARC
Bozeman	July 8	Post Farm
Creston	July 22	NWARC
Sidney	July 28	EARC
Corvallis	August 11	WARC

Publications

Dunkel, Florence V., Stefan T. Jaronski, Christopher W. Sedlak, Svenja U. Meiler, and Kendra D. Veo. 2010. Effects of steam-distilled shoot extract of *Tagetes minuta* (Asterales:Asteraceae) and entomopathogenic fungi on larval *Tetanops myopaeformis.* Environmental Entomology. 39:979-988.

Matt's Column-Without-A-Cute-Name By Matt Rognlie

Hello, and sorry for no catchy title! I've been asked, in Bob Johnston's absence, to provide some technology information for your newsletter and I'm happy to do so.

I think the best topics for this edition include updates for you from the College of Ag and MSU in general. First, you all know that Bob Johnston has retired and with budgets being what they are, no immediate plans exist for hiring computer support in the department. Another department in the College lost their computer support position due to the person taking a new position elsewhere and that position also will not be filled. This has had an impact on computer support from the College level.

Perhaps it is timely now to update you on what services are actually provided at the College level. I am responsible for all College servers and the services they provide. Examples are hosting College Web sites (including PSPP, but hosting only; no design or updating), databases (including AgBooks), some file services, and network and service support for remote sites. My other primary duty is to provide administrative services and support to the Dean and Director's Office. In the past, I tried to provide as much departmental support as possible outside of those duties, especially for those departments without dedicated support. As support needs increased, I hired Chris Leonti in August of 2005 to provide desktop support to departments in our college, a staffing arrangement that has worked very well. He and the MSU HelpDesk are your first points of contact for computer support issues. Chris can be reached at x4252 or cleonti@montana.edu. With the recent departure of two departmental support personnel our support requests have increased dramatically and we are providing the best support we are able to. However, response times have certainly changed and there will be the occasional project we'll have to say no to.

The third person in the office is Ric Roche, who has served as our software engineer for around 30 years. Seeing that magic number, you won't be surprised to learn that Ric is retiring the end of the calendar year. Ric's skills have been extremely valuable through the years and it would be very difficult to find someone with a remotely similar skill set. Regardless, due to our budget situation I will not be filling Ric's position after December 2010. I am in the process of finalizing plans to handle the loss of this position.

Finally, I'd like to update you on a pending change to MSU-level technology services. In an effort to streamline redundant services and save costs, ITC is undergoing an 'E-mail Simplification Project.' The most visible change for PSPP staff will be that e-mail services provided on the UNIX server 'GEMINI' are expected to be discontinued. Staff will be able to get an account on the Microsoft Exchange server if they don't already have one, and can continue to use their favorite e-mail client on their machine. Additionally, it looks likely that "Google Apps" will be made available to staff as well as students, as long as legal issues can get worked out. Students have been using the e-mail functionality in Google Apps for some time now and it has been well-received. If staff do choose to use Google Apps, their address would end in @msu.montana.edu instead of @montana.edu. I strongly recommend that faculty and staff needing to move off GEMINI get an Exchange account and use Outlook as a client due to the enhanced features available.

I'm happy to take questions or concerns at any time.
Matt Rognlie, x7177,
mrognlie@montana.edu

By Toby Day

Q. I have a raspberry patch that never has done very well. Is there anything I can do to make it produce more raspberries?

A. The number one thing that I see wrong with most raspberry patches is that they aren't pruned properly. Raspberries will produce first year vegetative canes called "primocanes" that don't bear fruit until they have over-wintered. Once the primocanes over-winter, they produce flowers and then fruit on the second year's canes, which are called "floricanes." Once the floricanes have produced their fruit, they should be pruned out and the remaining primocanes should be thinned to a 6" spacing, which is a much greater spacing than most people expect. The following spring, fertilize your raspberries with a complete fertilizer (10-10-10) by applying ½ to ¾ pound of actual nitrogen

per 100 linear feet of raspberry canes. As for irrigation, you will want to apply one to two inches of water per week until harvest. After harvest, you will want to reduce watering and even eliminate watering altogether from mid-August until the leaves fall off. Only after the leaves fall off should you begin irrigating again with one inch of water per week until the ground freezes. This is to ensure that there is an ample amount of water available so they don't desiccate (dry out) during the winter. If you don't have much snowfall, seasoned gardeners will tell you that you might want to irrigate the raspberry patch even in the winter, especially if you are experiencing those warm winter Chinook winds. Proper pruning, fertilization and irrigation will help you produce more berries.

If you would like to learn more, go to Montana State University Extension Publications at http://www.msuextension.org/store/ to find information on raspberries and many other yard and garden subjects.

Jinrui Welcomes Daughter

Jinrui Zhang (Giroux lab) and her husband, Zhengxian Yang welcomed daughter Jessica into their family last Saturday evening, June 26, 2010, at 6:50 p.m. She weighed 7 lb 6 oz and is 20 inches long. Her name is Jessica. Congratulations to you both!

July Birthdays

Jinling Kang	1
Susie Couch	2
Mary Burrows	7
Andy Hogg	8
Ernesto Moya	12
Susie Siemsen	22

Recipe of the Month

Grilled Ribeye Steak with Onion Blue Cheese Sauce

2 Whole Ribeye steaks
2 T butter
Salt
Pepper
4 T Butter
1 whole very large yellow onion, sliced
1 c heavy cream
1/2 cups crumbled Blue Cheese

Saute onions in 4 T butter over high heat. Cook for 5-7 minutes, or until dark and caramelized. Reduce heat to simmer and pour in cream. Cook for 3 to 5 minutes, or until reduced by half. Stir in blue cheese until melted. Serve steak on generous portion of sauce. Enjoy!