



**Second National Plant Diagnostic Network (NPDN) Meeting, Dec. 6-10, Miami, FL
By Mary Burrows, Linnea Skoglund,
Melissa Graves, and Ruth O'Neill**

While everyone in Bozeman was freezing, the Schutter Diagnostic lab headed to sunny Miami, Florida. Montana had five representatives: Mary Burrows, Linnea Skoglund, Melissa Graves, Ruth O'Neill and Patty Denke from the Montana Department of Agriculture and our state's vice-SPRO (State Plant Regulatory Official).

The meeting covered a variety of subjects including: plant biosecurity, new and emerging threats, techniques for detection and surveillance, and new technology tools. The presentations illustrated the complexity of guarding against invasive species. Florida is the first line of defense, making it an excellent choice for the meeting. However, even in Montana we must be vigilant and participate in the networks that are in place. Many presentations helped us to understand the role of the Schutter Diagnostic Lab in NPDN.

Linnea Skoglund took part in the pre-meeting tour of Fairchild Tropical Botanic Gardens and the Everglades. The Gardens were established in 1938 and are leaders in world-wide conservation. They have the most amazing collection of over 4000 species of cycads, palms, succulents, fruits and flowering plants. This is an important genetic resource for many endangered or threatened wild species. We spent the morning wandering around and taking a guided tour train. The Gardens have several water features ranging from a small lily pond to brackish mangrove habitat.

For those who like house plants, this is an opportunity to see them in their natural state – HUGE.

Art is strategically located throughout the Gardens. The current featured artist is Yayoi Ku-



They don't grow them like this in Montana! Linnea and an unidentified tree at Fairchild's.



sama. Her art is famous for hand-worked repetition and bold patterning.



Wheeee! Airboat in the Everglades.

We enjoyed a lovely lunch under one of the permanent event tents at the Gardens.

We then proceeded to the Everglades for an airboat ride and visit to the Miccosukee Indian (a group of the Seminole tribe) cultural center.



The Everglades are just what you expect – vast expanses of water and grasses punctuated by hummocks of scraggly trees.

And no trip is complete without alligator wrestling!

Mary Burrows and Ruth O'Neill attended a tour after the meeting. Our first stop was the APHIS-PPO (Animal Plant Health Inspection Service – Plant Protection and Quarantine) station at the port of Miami. Their purpose is to control the entry of plants and other propagative materials, and to prevent the introduction of exotic pests that can accompany these products. There are 17 inspection stations in the US. The Miami inspection station is by far the busiest. In 2009 they processed 1.2 billion plants, 200k flasks with tissue culture, 1.2 million kg of seed, and 11k stems in 8,677 plant shipments. This is 79% of all of the plant propagating material imported into the US: 71% of the fruit and vegetable imports and 86% of the cut flower imports. When a pest is identified they incinerate

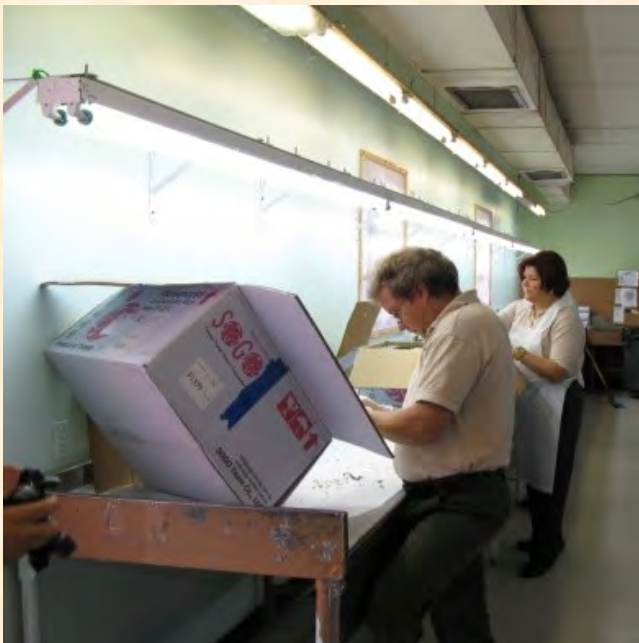
or fumigate the material (methyl bromide). Miami made 79% of the interceptions at inspection ports in 2009. When asked who the 'trouble-makers' are, the answer was that Italian tile was one of the most problematic items. Apparently tile makers leave the tile in un-cleared lots for months and the tile is colonized by various critters which get wrapped in plastic and shipped to the U.S. APHIS inspectors traveled to Italy and made many recommendations for storage to reduce tile as a source for invasive species. This is after all



Ruth wrangling a spider in the Kerry nursery – don't worry, she has a permit



3000+ acres of bromeliads and orchids



Inspectors processing phalaenopsis orchids at the APHIS inspection facility



How many plant pathologists does it take to find southern blight sclerotia?

why we call Florida the 'sentinel state:' they get every invasive species first.

We also toured 3,000 acres of bromeliads and orchids at Kerry's Nursery, where Ruth found an exotic spider to ID. The spider turned out to be a type of long-jawed orbweaver called the "orchard weaver", a very common resident in southern Florida.

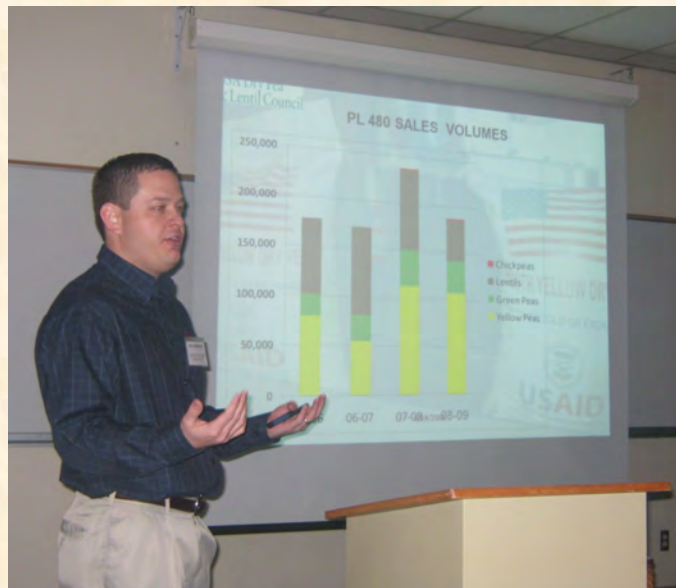
We then traveled to Schnebly's fruit winery for lunch. It was a beautiful location but after thoroughly researching the subject, the wine lovers' consensus was that the wine was terrible.

Our second tour was at Costa Farms, another large production greenhouse with thousands of acres of tropical bedding and house plants.

The most interesting part of any tour is the opportunity to see the ag production region and **research stations. Who knew you can't get** phone reception everywhere in Florida? We were definitely riding the bus in the area of the state harboring the greatest concentration of landscape companies. The scale of operations was much beyond the scope of ornamental industry in Montana. There was a great deal of winter squash production, beans, and tomatoes. We saw a number of fruit trees including avocado. **At the University of Florida's Tropical Research and Education Center** the pathologists and entomologists separated. Entomologists had a chance to visit with three enologists working at the station, and see living specimens **of the latest insect pests threatening Florida's** landscaping and agriculture. The pathologists dodged fire ants, but got to see a number of tropical fruits laid out for variety trials and take home fresh avocados.

Crop Pest Management School By Kevin Wanner

The New Year began with a successful 2010 Crop and Pest Management School (CPMS). The CPMS is held annually (in room 214 of the Plant Growth Center) the first week of January. Based upon client comments from 2009 a new approach was taken to the theme and schedule in 2010. Many attendees felt that the school would benefit from a schedule that focused more on specific cropping systems, so the theme in 2010 was "pulse and forage crops". **Eric Bartsch**, Manager of United Pulse Trading, Bismark, ND,



Eric Bartsch, Manager of United Pulse Trading, Bismark, North Dakota, provided an overview of the pulse crop industry.

provided an overview of the pulse crop industry to kick things off. Dennis Cash, MSU Animal and Range Sciences, provided an overview of alfalfa and perennial forage management to start the second half of the workshop. The new format that attempted to provide a comprehensive coverage of topics affecting each crop system was well received. The class was fully enrolled with 40 participants with a waiting list of about six that could not be accommodated. Another out-of-state speaker who made the long trek to Bozeman was Kevin McPhee, from North Dakota State University, who talked about pulse breeding programs. Karnes Neill (working with Chengci Chen at Central Agricultural Research Center in Moccasin) also made the trip to Bozeman to talk about Pulse variety performance in Montana. In addition to our guest speakers, many of our MSU Specialists and Agents provided excellent lectures on topics ranging from disease, insect and weed management to economic, production and nutrient topics. Their contributions are listed on the agenda listed at the end of this article. Eligible participants received 14.5 CCA credits, 8 private pesticide applicator credits and 6 commercial applicator credits after completing the 2.5 day workshop. **As usual, the traditional pizza at Columbo's on the second night was popular and fun!** Many thanks to everyone who helped make the 2010 CPMS a success, including the students. The Northern Pulse Growers Association kindly provided \$1,500 to help support travel costs of



Kevin McPhee, from North Dakota State University, talked about pulse breeding programs.

guest speakers and generally supported the 2010 CPMS. Thanks to David Baumbauer for helping out with 214 PGC, and Peggy Bunger and Emily Rohwer for helping to put it all together. For those interested PDF files of most of the lectures will be posted on my website soon (<http://www.msuextension.org/drwanner/>). In 2011 the CPMS will again focus on Montana's main agronomic crop, small grains.

2010 CPMS speakers:

- Eric Bartsch – *Overview of the pulse crop industry*
- Perry Miller – *Pulses in crop rotation*
- Kevin McPhee – *Pulse breeding*
- Karnes Neill – *Pulse variety performance in Montana*
- Kevin Wanner – *Pulse insect pests*
- Barry Jacobsen - *Modern fungicides & resistanc management*
- Fabian Menalled - *Pulse and forage weeds*
- Mary Burrows - *Pulse and forage diseases*
- Clain Jones – *Nutrient management of annual legumes and forages*
- Dennis Cash – *Alfalfa and perennial forage management*
- Duane Griffith – *Forage crop economics*
- Ron Carlstrom - *Ceral forage management and production*
- Dennis Cash - *Monitoring pests that reduce alfalfa stand longevity*
- Cecil Tharp – *Managing alfalfa weevil*
- Kevin Wanner – *Forage insect pest biology and management*

Plant Genome Conference

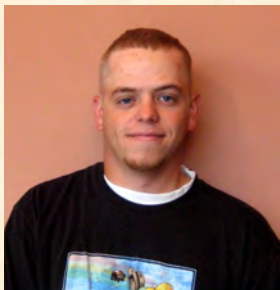
By Yukiko Naruoka



I presented a part of my thesis project as a poster at the PAG conference and gave a short oral presentation in the Wheat CAP meeting which was one of the highlights of this trip. The Wheat CAP meeting was a great opportunity to meet other researchers and graduate students who work on wheat in the U.S. and to share the progress and problems of each project. I talked to a professor from Purdue University about root measurements and shared pains and difficulties of the measurements, especially when it involves field conditions for hundreds of lines. Although it would have been nice to have more time to meet and talk to other graduate students, Jay and I hung out with graduate students from Virginia tech (one of them, Andrew, actually worked with us in Bozeman during the summer two years ago) and had a great time. In each workshop of the conference, presenters were usually people on the cutting edge of their field, and the presentations were very inspiring. Development of new molecular markers and new genotyping methods using difference of melting points and genomic selection were a few of the topics

covered that are of great interest in cereal genomic research. There were also a couple of techniques discussed that may be useful for my projects. I greatly appreciate the opportunity to attend the PAG conference and Wheat CAP meeting and present a part of my project.

By Jay Kalous



The big highlight of the PAG conference for me was the Wheat CAP meeting. The discussion that went back and forth among the different professors was informative, as well as entertaining. I also enjoyed walking through the various posters that were presented. It was nice to casually talk with peers working on the same problems I have been facing with my own thesis research.

The Wheat CAP meeting was very interesting. Four different breeders gave short presentations on different research areas that could help the wheat breeding and genetics community capture another national grant. These four areas included improving nutritional quality, breeding traits that will help counteract potential impacts of climate change, further combating world hunger by improving yield with novel traits, and the final idea was to have a more nationalized push for breeding better rust resistance.

Dr. Jaime Sherman arranged a workshop on bioinformatics as part of the USDA National Needs grant that funds me and several other graduate students at different institutions. This workshop was very informative. It was broken down into four parts including sequence alignment, clear usage of the multitudes of public databases currently available, marker development, high-throughput marker screening techniques, and finally a short session on annotating some specific wheat genomic sequences.

The discussions gave me great ideas on what I could do to improve my project and had me actually wanting to be back at work and leave the sunny, 70 degree weather in San Diego for **Bozeman's below zero temperatures.**

Riesselman Receives Award

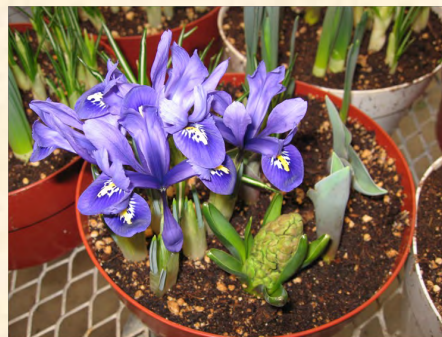
Jack Riesselman received the Epsilon Sigma Phi Alpha Chapter Retiree Service Award at **MSU's annual Extension Conference.** The award is given to retired extension professionals who continue to be actively involved in Extension activities following retirement. The rumor among extension agents is that Jack is working harder now than when he was an MSU employee!

Congratulations Jack!

Horticulture Open House

The Horticulture Open House will be April 19, 2010 from 1-4pm. Student work will be on display as well as plant demonstrations, plant sales, and student presentation.

Horticulture Club Selling Bulbs



The MSU Horticulture Club can get you started on an early spring! Spring garden bulb pans are now available for purchase, so you can watch

beautiful tulips and daffodils grow up and bloom in a matter of weeks. We also have a garden variety pack full of bulbs such as iris, crocus, tulips, narcissus, daffodils, and hyacinth- giving you 3 full weeks of breathtaking displays. No need to wait for April, start spring at home or in the office today!

Eight inch bulb pans are priced at \$20 each. Supplies are limited so place an order right away. Order forms are available at **Joanna Dumas's Desk (3rd floor in Leon Johnson)** or with Irene Decker (1st floor in Plant BioScience). We will soon contact you to arrange a delivery day and time (on campus only). Make any checks payable to MSU Horticulture Club. For further information and any questions please contact the Horticulture Club at hortclub-msu@gmail.com.

Thank you for your support!!!
MSU Horticulture Club

Entomological Society of America Annual Meeting

Ross Winton, Crystal Maier and Michael Ivie attended the Entomological Society of America Annual Meetings in Indianapolis, 12-16 December, as well as the associated Coleopterists Society and Entomology Collection Network meetings. They presented two posters together, and Crystal and Mike each gave a paper in a symposium organized and moderated by Ross and Crystal. Mike was surprised at the Coleopterists Society Annual Meeting by the announcement that he had been made an Honorary Member of the Coleopterists Society, only the 10th time this honor has been bestowed.

MS Graduates

Pete Zuck recently received his Master's degree in Plant Science. Pete is currently applying for extension positions with the hope of retiring from his DJ career.

Mary Brennan Lollis received her Master's degrees in Plant Pathology. Mary is seeking a position, preferably in the Northwest. Congratulations Pete and Mary!

Grants

Project Director: Kevin Wanner, "Developing Lepidoptera Sex Pheromone Receptors as Novel Pest Control Targets by Elucidating Their Mechanism of Action" Program: **AFRI, Arthropod and Nematode Biology and Management: Suborganismal Biology**, Recommended: \$329,928, Duration: 3 years

Publications

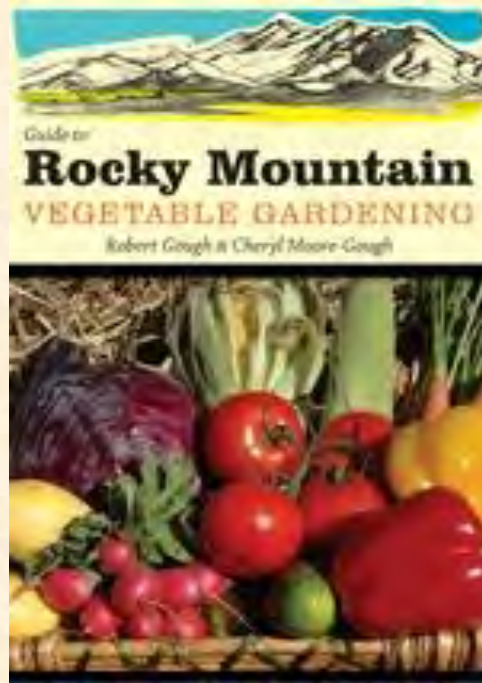
A Revision of the West Indian Genus *Nesocyrto-soma* Marcuzzi (Coleoptera: Tenebrionidae). 2009. Katie J. Hopp and Michael A. Ivie. The Coleopterists Bulletin 63(sp8): 1-138. 2009.

A paper based on Katie Hopp's thesis (MS in Entomology) was chosen for the 2009 Vaurie Monograph, and published by the Coleopterists Bulletin. The Vaurie Monographs are a series of annual large papers, competitively selected by a committee of editors. One paper per year is published in the series, with the page fees covered by the Vaurie Fund of the Coleopterists Society.

Wanner K.W., Nichols A.S., Allen J.E., Bunger P.L., Garczynski S.F., et al. 2010. Sex Phero-

me Receptor Specificity in the European Corn Borer Moth, *Ostrinia nubilalis* PLoS ONE 5 (1): e8685.

The Gough's Newest Book



Bob Gough and Cheryl Moore-Gough's newest book, Guide to Rocky Mountain Vegetable Gardening is being re-leased February 1. This is the first vegetable gardening book that addresses the unique growing conditions and challenges of the

five states of the Rocky Mountain region. Topics include starting your garden from seed, planning your garden with helpful space saving techniques, and a comprehensive presentation of vegetables suitable for Rocky Mountain gardeners. Guide to Rocky Mountain Vegetable Gardening is published by Cool Springs Press and is Bob and Cheryl's 5th book in 5 years.

Bob's Byte By Bob Johnston Protect that laptop when traveling (Nina)!



Enable a strong BIOS password

Foils would be data thieves right from the start by password protecting the BIOS. This will prevent a thief from even starting up your laptop

Engrave the laptop

Permanently marking (or engraving) the outer case of the laptop with your company name, address, and phone number clearly marking your laptops deters casual thieves and may prevent it from simply being resold over the internet via an online auction.

Get a cable lock and use it

Over 80% of the laptops on the market are equipped with a Universal Security Slot (USS) that allows them to be attached to a cable lock or laptop alarm. And remember: They only work if you use them properly. Tether them to a strong immovable and unbreakable object.

Use tracking software to have your laptop call home

There are a number of vendors that offer stealthy software solutions that enable your laptop to check in to a tracking center periodically using a traceable signal. In the event your laptop is lost or stolen, these agencies work with the police, phone company, and internet service providers to track and recover your laptop. Lojack is probably the most well known application of this sort.

Backup your data before you leave

Many companies have learned the hard way that the data on your computer is more expensive to replace than the hardware.

Consider using offline storage for transporting sensitive documents

Backing up your hard drive before you leave can help you retrieve your data when you return from your trip, but it doesn't do you any good when you're still out in the field. There are several vendors that offer inexpensive external storage. You can also store documents on your office computer and access these with remote desktop.

Use a non-descript carrying case

Nothing says "Steal me" like walking around a public place with a leather laptop case with the **Manufacturer's or your company's logo stamped** to the side. Consider buying a form-fitting padded sleeve for your laptop, and carrying it in a backpack, courier bag, briefcase, or other common nondescript carrying case. (A prime target area for laptop thieves in hotels, bars, airports, and convention centers). If you are traveling in airports and train stations, consider putting small locks on the zippers of your case (especially backpacks) so no one can simply reach into your bag and rip you off as you are standing in line.

When traveling by air....

There are a number of sophisticated profes-

sional crime rings that prey on business travelers carrying laptops. They look for brand new, high end laptops and often shadow the airport curb side check in, airline and rental car check-in counters, airport shops and security checkpoints. Anywhere where you might set your laptop bag down for a minute to attend to other things, thieves may lay in wait.

When traveling by car...

Always rent a car with a locking trunk (not a hatchback/minivan/or SUV) and never leave your laptop in a vehicle where a passing thief can see it through the window. If you do place your laptop in the trunk, use your cable lock to secure it to the trunk lid so that they still can't take it easily even if they manage to open the trunk. If possible, rent a car with an alarm system and no external stickers identifying it as a rental. Thieves target popular lunch spots with crowded parking lots, and they often look for rental cars. If you store your laptop in the vehicle for any period of time, keep in mind that the extreme temperature ranges within the vehicle could wreck havoc with your laptop. In the summer, the inside of a parked car can reach temperatures that will melt your laptop's components. In the winter, LCD screens can freeze solid and split.

While staying in a hotel...

Savvy road warriors already know the hazards of leaving valuables in hotel rooms, and professional thieves know that business travelers almost always have a few goodies that can be sold for a quick profit. If you keep your laptop in your hotel room anchor it securely to a metal post or fixed object. Consider a motion alarm for your laptop as well as one for your room. When not in your room, consider locking your laptop up in the hotel's safe. (Make sure you get a receipt).

When attending conventions and conferences...

Laptop thieves target business conferences and conventions because they know you'll feel more comfortable around your peers. They look for events that use the same facilities for a few days, because they're counting on you to become lax as you become used to the surroundings and start to feel safe.

Make security a habit

People are the weakest link in the security chain. If you care about your laptop and your data, a healthy dose of paranoia will help keep it safe. Get into the habit of locking your laptop up when you're working with it, or when storing it. (A cable lock takes less time to install than it does for your PC to boot.) Use common sense when traveling and try to stay in physical contact with your laptop at all times. If you are traveling with trusted friends or business associates use the "buddy system" to watch each others back (and laptops). A determined thief or industrial spy may still be able to get your laptop if they set their mind to it, but why make it easy for them?

Thanks to the University of Washington for these tips – modified by RHJ.

Controlling Oystershell Scale By Toby Day

Q: I had oystershell scale on my aspen trees last year to the point they were killing the trees. I remember that there was a product for oystershell scale that was hard to find and that the timing of application was very important. Can you tell me what the product is and when I should use it so that I am more prepared this year?

A: Oystershell scale has been quite severe in many parts of the state. The oystershell scale (*Lepidosaphes ulmi*) will infest the branches and trunks of many woody species, but aspens and Cotoneaster seem to be species that have been mostly affected this last year. Like many other types of scales, oystershell scales have piercing and sucking mouthparts that are much like an aphid. However, unlike an aphid they are much harder to kill because, just as their name suggests, they are covered by a waxy protective covering most of the time.

To control oystershell scale, you can rub the scale off the tree or shrub. I like using a plastic scrub pad, but don't scrub too hard or you can injure the tree. If the infestation is really heavy, try to prune out the infected branches.

The chemical control that is most effective and least toxic is horticultural oil. Horticultural oils smother the scale when they are most vulnerable and should only be sprayed in May or June just as the leaves of the buds of the tree start

to show. Spraying with horticultural oils in May or June ensures that you are spraying the scale when they are most vulnerable after the eggs hatch and they are at their "crawler" stage moving to different parts of the tree. Two to three applications a week apart may be necessary to ensure that you sprayed at the perfect timing. If you have missed the timing to spray, contact your county Extension agent for other chemical controls. But keep in mind, adult scales are generally not affected by insecticides, so timing is important.

Bruckners Welcome New Addition

Phil Bruckner and his wife, Cindy, announce the adoption of their five year old son, Guan Yan, from Southern China. Guan Yan has been renamed Joshua GuanYan Bruckner. After fifteen or sixteen months of effort (mostly by Cindy) all paperwork was completed and we were approved for travel. Phil, Cindy, and Ryan traveled to China from December 2-18. They traveled first to Beijing and then to Guangzhou where they met and adopted Joshua. If you wish, you are welcome to read about their adoption experience and progress in China through Cindy's postings to her blog: <http://calledtoadopt.blogspot.com/>. According to Phil, "Joshua has certainly livened up our household!"

Congratulations Phil, Cindy, and family!



Cheryl Is Awarded 4th Degree Black Belt

Cheryl Moore-Gough has been awarded the rank of Yondan (4th degree black belt) in the Japanese martial art, Aikido. The rank was



conferred by the current head of Aikido, Doshu Moriteru Ueshiba, grandson of the founder **O'Sensei Morihei Ueshiba**. Cheryl has studied Aikido for 17 years and taught for 11. She is the current weapons instructor for Big Sky Aikido, located on South Wallace.

An update on Christina Riesselman



Christina Riesselman, who worked with Jim Berg and Phil Bruckner for two summers several years ago, had a

very busy year last year. In September, she was married to Chris Moy at Big Sky. Both Chris and Christina have finished their Ph.D programs in Geology at Stanford. Christina is currently on an Integrated Ocean Drilling Program (IODP Expedition 318) evaluating Cenozoic East Antarctic Ice Sheet Evolution on the Wilkes Land Margins aboard **the IODP's research vessel,**

the Joides Resolution. Her specialty is diatoms and she will be evaluating cores sampled from 200 meters below the ocean floor which is 1000

meters below the surface. The expedition left Wellington New Zealand on January 4th and will return to Hobart, New Zealand on March 9th.

Her husband Chris, recently accepted a faculty position at Ortega University in New Zealand where he will teach for three months and then spend a year as a post-doc at Woods Hole before returning to New Zealand.

Recipes of the Month

Ollie Bollen

By Harvey TeSlaa

These were a big hit at Friday coffee break a few weeks ago—yummy!

Beat:

2 eggs

3/4 c sugar

2 T canola Oil

Sift in:

3 1/2 c flour

4 t baking powder

1/2 t salt

Add:

1 c raisins

Mix in :

1 1/2 c milk (may use a little more if dry)

Dip stainless steel scoop (medium size) in oil; drop batter into hot canola oil until brown on all sides, then roll in sugar. Oil temperature should be 350°-375°.



Cream Cheese Sugar Cookies

1 1/2 cups sugar

8 oz cream cheese

1 c butter (2 cubes)

1 t vanilla

1/2 t almond extract

1 t baking powder

Blend all ingredients together.

Add 3 1/2 c flour— blend well and chill for 8 hours.



May roll these out or use small scoop and then press down and place pecan in center of each cookie.

Bake at 375 degrees.

February Birthdays

Jeffrey Johnston 2
Linnea Skoglund 10
Norm Weeden 12
Alan Dyer 15
Phil Bruckner 17
Pam Border 23

