Plant Science Says

June, 2002

Retirement Party for Dr. Don Mathre
by Jane Jessell

Over 100 of Don Mathre's colleagues and friends gathered at the Ag Bioscience Facility on Wednesday, May 22, to celebrate Don's career at MSU and to wish him well as the next chapter of his life in Bozeman begins.

A potluck was served (our thanks to Jack Riesselman for his barbequing expertise!), and during the luncheon, on behalf of the faculty and staff, Dr. Weeden congratulated Don on his outstanding career at MSU. Bob Johnston presented Don with a Memory Book, letters written to Don by his colleagues and friends with their personal reminiscences of the significant role he played in their lives and careers at MSU.

Don graciously thanked everyone and promised he would remain a familiar figure in the Department and around the campus. He also introduced his wife Judy and daughter Susie to the group. Professionally, Don is Chair of the APS Foundation Board and expects to remain challenged and

Larry Fauque, their high school science teacher, the duo planned to study crown gall in sunflowers. But after exchanging ideas with Bill Grey, a researcher in plant sciences and plant pathology at Montana State University in Bozeman, Lazenby and Fairhurst decided instead to focus on mint, a valuable cash crop in Montana's Flathead area. Mint oil flavors everything from mouthwash to medicine.

Grey told the students that, while Montana peppermint is vulnerable to a particularly nasty disease called verticillium wilt, native spearmint resists the disease. So what's different about the spearmint? Since wilt infects plants through their roots, Lazenby and Fairhurst wondered whether helpful bacteria on the roots of the spearmint plant aided the resistance. If so, they hypothesized, transplanting that bacterium to the roots of the peppermint might transfer disease resistance as well.

Grey invited the students to the MSU campus in Bozeman, where they discussed research methods and hypotheses. He sent them home with mint plantlets that Fairhurst and Lazenby began cultivating in their high school biology lab.

All the while, they exchanged questions by e-mail.

Grey works regularly with undergraduates at MSU, and says he is well aware of the talent and desire of most young students. However, Grey said, he was surprised by the advanced questions and theories posed by Lazenby and Fairhurst.

"I said to myself, 'Holy buckets, I've got a tiger by the tail,'" said Grey. "They're highly motivated."

Just like real scientists, Fairhurst and Lazenby had to overcome many obstacles. First, spider mites wiped out their mint crop. Then, a mysterious saboteur cranked up the grow lights to 90 degrees, killing all their plantlets. Eventually, however, they were able to extract bacteria from the roots of the native spearmint and transfer it to the peppermint. They then infected the peppermint with verticillium and used statistical analysis to determine whether or not the bacteria had enhanced the plant's resistance to the disease. It didn't.

While the students had not hit upon the magic bullet for battling wilt, they had eliminated one possibility, which is exactly what real-world agricultural researchers do. And they decided to continue the experiment even after winning a blue ribbon and third place grand award at the regional science fair in **Great Falls**, then second runner up in the grand team awards at the state science fair in **Missoula**. Next year, as seniors, the two hope to earn a trip to the International Science and Engineering Fair in Cleveland.

In addition to providing valuable material for their exhibit, Lazenby and Fairhurst were pleased that their research may have further implications. "We chose this area of study because agriculture is a major industry in Montana," Fairhurst said. "We hoped to find a way to prevent this disease which is destructive not only to the mint industry but many industries."

"It's great knowing that I could make a difference and try to solve a large problem for the state," said Lazenby.

Students in Mycology Lab win Awards

Cathy Cripps would like to recognize those in her lab who have recently received awards:

Todd Osmundson

- Bayard Taylor Fellowship for Master's candidate, College of Ag

Sarah Klingsporn

-Award for Excellence, College of Agriculture
-John and Grace Shutter Agricultural Merit Scholarship, College of Ag
-Bayard Taylor Undergraduate Scholarship, College of Agriculture
-Clyde and Helen Erskine fund for Excellence in Agriculture, College of Agriculture

Leslie Eddington

-Bayard L.Taylor Undergraduate Scholarship, College of Agriculture
--Clyde and Helen Erskine fund for Excellence in Agriculture, College of Agriculture
-Undergraduate Scholar

Chris Mahoney

-Biology Assistantship

I would like to congratulate my students on their 2002 accomplishments and thank them for their dedication to the Mycology Lab!

Cathy Cripps

Bob's Byte

(Irene Decker is filling in for the summer due to Bob's heavy workload).

Search engines are one of the key tools to finding what you want on the internet. To help

you conduct more effective searches you should know about a few conventions common to many search engines. You might already know that the plus sign "+" between words means "and." By using the minus sign "-" you can exclude words. For example, you want to find information about the Canadian band, The Waltons, but you don't want pages about the old TV show. Type in: Waltons - TV + band + Canadian.

Another convention is to put quotation marks around a phrase like "Cape Breton fiddle." Often searching for a phrase works better than just using the plus sign between words.

Since different search engines work on different principles some engines are better suited for certain searches. Engines like Google or Direct Hit are good for pulling up results in response to general search terms. These engines monitor how popular pages are and the more popular pages will rank higher in your search results.

Sites like Yahoo! and LookSmart are actually compiled directories. They only contain sites that have been registered by the creators, and there are usually short descriptions. Sites like these are good for finding information on general or popular topics, but might not be helpful in finding more esoteric information. At Yahoo! Canada you can restrict your search to just Canadian sites which is useful if you're looking for local information.

If you are looking for a specific fact or piece of information instead of a general site try using a meta-engine like Metacrawler or SavvySearch. As the name implies, meta-engines query several major search engines then compile the results. Large engines like AltaVista or Fast Search are also more likely to help you find information on an academic or obscure topic.

To find out more about the major search engines and meta-engines check out Search Engine Watch.

Following are shortcut keys for surfing the web.
Switch between full-screen and regular views of the browser window - F11
Move through items on a Web page; from the Address bar to hyperlinks - Tab
Activate a selected link - Enter
Go to your Home page - Alt +HOME
Go to the next page - ALT+RIGHT ARROW
Go to the previous page - ALT+LEFT ARROW or BACKSPACE
Refresh the Web page - F5 or CTRL+R

Sweet Peas
by Bob Gough

There's a lot to be said for old-fashioned cultivars of flowers and vegetables. Somehow they seemed to be more fragrant or they tasted better than our modern cultivars. Part of this is selective memory. We tend to remember the good things and forget the bad. Maybe we only remembered the sweetest-smelling flower? But it may not be a question of memory with sweet peas.

The sweet pea is distantly related to our garden pea and occupies a different genus: *Lathyrus*. Plant the sweet peas in full sun and any good, well-drained garden soil rich in nutrients and you shouldn't have many problems. The original old-fashioned strains of sweet peas were extremely fragrant and were considered to

have one of the most delicious scents in the plant kingdom. Their sweet odor and masses of colorful blossoms made them the most popular flowers in the early 1900s. But because these old-fashioned strains did poorly in the heat of summer, breeders worked to replace them with more heat-tolerant cultivars. Unfortunately, much of the distinctive fragrance was sacrificed in the process.

So the selection process of modern science gave us heat-tolerant, disease-resistant cultivars that had a fainter fragrance than the old-fashioned cultivars. But the breeders have returned and begun to mend their ways by selecting for fragrance again. Try the new cultivars 'Snoopea', 'Rosy Frills', and 'Royal Wedding' for a fragrance treat. Also, the old-fashioned cultivars 'Antique Fantasy' and 'Painted Lady' are once again available from seed suppliers.

June Birthdays

Carlotta Balconi	1
Uvi Castillo	10
Ron Larson	12
Ron Ramsfield	15
Jackie Kennedy	15
Luther Talbert	18
Eileen Carpenter	22
David Ezra	26
Tim Anderson	30

Recipe of the Month

Cinnamon-Oatmeal Pancake Mix
4 cups quick cooking oats
2 cups all-purpose flour
2 cups whole wheat flour
1 cup non-fat dry milk
2 Tb cinnamon
1 1/2 Tb salt
3 Tb baking powder
1/2 tsp cream of tartar
Combine all ingredients and stir to mix well. Store in refrigerator. Makes about 8 cups.

Mixing Directions: In a medium mixing bowl, beat 2 eggs. Beat in 1/3 cup of vegetable oil gradually. Alternately beat in 2 cups pancake mix and 1 cup of water. Pour in large spoonfuls into a lightly greased skillet over medium-high heat, and cook until the tops show broken bubbles (2 to 3 minutes). Turn and cook about 2 to 3 minutes more, until golden brown. Makes 12 5-inch pancakes.

busy with those responsibilities. He is also a volunteer at the Museum of the Rockies, helping with the gardens that surround that facility. Mushrooms have been a long standing interest of Don's and he will continue working with Cathy Cripps on m[illegible]oom collection and production.

Thank you Dr. Mathre, for all your years of service and we are very happy to know you will still be around! Also, thank you to Bob Johnston, Bill Grey and Jack Martin for putting on a great party!

Are we Alone?
By Mark Young
How often does one get to feel like a kid again? Well, that's exactly how I felt when I was asked to speak at this year's NASA Astrobiology Conference. The meeting brings together scientists from all disciplines that are interested in astrobiology. What is astrobiology? No it is not the study of astrology. Astrobiology is the study/search for life on non-earth based bodies. So in one of the largest single rooms in the US (in fact it is an old blimp hanger from WWII located at Moffit Field in Mountain View CA) over 600 physicists, engineers, chemists, biologists, ecologists, and any other scientific discipline you care to name talked about the possibility, reality, and search for life in the universe.

Talk about interesting 'out of this world talks'! There were talks on the incredible abundance of water in the universe, new planets that have been found in other solar systems (over 60 have now been identified), possible oceans on the moons of Jupiter, NASA pl[illegible]or exploration of Mars, the abundance of organic molecules in space, the discovery of life in every conceivable extreme environment on earth, and new methods for space travel. I felt like a kid in a scientific candy store! It was clear from the talks at this meeting that the answer to the basic question of 'are we alone?' is certainly going to be 'no'. I am confident that within the next 25 –50 years we will witness one of the greatest scientific discoveries, life elsewhere in the universe.

Collegiate Scholars Named
The American Society for Horticultural Sciences has named its inaugural group of Collegiate Scholars. Scholars are juniors and seniors who are majoring in horticulture and are in the top 15% of their major. Student's names appear in the ASHS newsletter and they each receive a certificate of recognition. Montana State University scholars are: Gina Goss, Leah Jarrett, Cory Johnson, Sarah Klingsporn, and Charles Marks.

Grey receives Award
Bill Grey is the first recipient of "The True Teacher Award" for 2001-2002. The recipient of this award is based on the number of votes received from students in our Department. This award is presented by The Horticulture Club.

Jamie Newport, a Senior in Landscape Design tells why he voted for Bill, " It seems to me Bill is one of those guys that loves what he does. His enthusiasm carries over to his teaching making learning more enjoyable". Congratulations Bill!

Gough Elected Fellow

Bob Gough has been elected a Fellow of the Society for Horticultural Science. This is in recognition of outstanding contributions to the science, profession, or industry of horticulture. Along with other newly elected fellows, Dr. Gough will be honored at the Awards Ceremony on Sunday, August 11, 2002 in Toronto, Ontario, Canada. Congratulations Bob!

Osmundson receives Scholarship

Congratulations go to Todd Osmundson who has been named the recipient of the Bayard Taylor Fellowship for the Outstanding Master's Student in the College of Agriculture. This year, the quality of the candidates and their projects was excellent so this is a true honor. The amount of the fellowship is $8,000.

Todd received his B.A. in Geology from Carleton College in 1993 and another B.A. in Botany from MSU-Missoula in 2000. He is in his second year as a Master's candidate under Dr. Cathy Cripps.

Young scientists Wage War on Wilt
By Suzi Taylor, MSU News Services
SUNBURST--In high schools around the globe, the question echoes through the hallways: "But what does this mean to REAL LIFE?" Two Montana students recently found out, thanks to a science fair project that could mean big bucks to the state's largest industry, agriculture.

Maggie Fairhurst of Sunburst and Tanya Lazenby of Kevin, both juniors at **North Toole County High School** in **Sunburst**, wanted to research plant diseases. Inspired by