Here comes the sun…finally. Sometimes you start to wonder whether spring will come and then, suddenly it’s there, and what a difference it makes. A few days of sun and everyone seems happy. And I suppose, in our department, despite the challenges, we do have lots to be happy about. Maybe the sun reminds us of that. So what is there to be happy about? Well we had some success this spring in terms of grant applications. A number of OMAFRA Tier II’s were re-assigned to Tier I’s and congratulations to Helen Fisher, Mary Ruth McDonald and John Cline for leading those successful applications. There were also some successes with the OMAFRA New Directions grants, including successful grants from Laima Kott and Al McKeown, Sean Westerveld and Mary Ruth McDonald, and Judy Strommer was successful in her application to OMAFRA’s Bioproducts Research program.

These successes with OMAFRA programs are welcomed but we shouldn’t be too surprised given the extent to which our department is engaged within the OMAFRA/University of Guelph partnership. I mention this because this is a special year for the partnership. It is the year when we are re-negotiating the partnership for possibly another ten years. How significant is the partnership? Well at its current annual rate it would be worth well over a half a billion dollars over ten years, and if we are successful in enhancing the partnership it could approach three quarters of a billion dollars over ten years, a very significant investment, and one which our department is pivotal in capitalizing on. Plant Agriculture is uniquely positioned within the partnership, within the university, and within the province to be a core engine in the innovation and discovery that will transform agriculture. Because we are the only academic department in Canada with both a large group of plant breeders and technicians and a large group of production researchers, we are the only university department that can be at the foundation of a plant bioproducts development strategy and a new revolution in agriculture. This fact has already been realized in a number of ways. The Ministry of Research and Innovation (MRI) has given us the Premiers’ Research Chair in Biomaterials and Transportation. It has also awarded the University of Guelph the BioCar grant from the Ontario Research Fund.

Continued on page 34...
A Mid-Year Update from the Co-ordinator for Graduate Studies:

There is much happening in graduate studies as we enter the summer months of 2007.

We are in the midst of an external review of our graduate program. This is really the first review covering a significant period of our history since the formation of the Department of Plant Agriculture and takes into consideration the seven year period prior to 2005 before I assumed the mantle of Graduate Coordinator.

The Ontario Council of Graduate Schools external consultants are Dr. Daniel Cantliffe from the University of Florida and Dr. Graham Scoles from the University of Saskatchewan. They will be on campus visiting us on May 29th and 30th.

As everyone recognizes this has been a trying decade for agriculture and schools of agriculture. Therefore, it is encouraging that we can still boast that there are several sizeable new awards and opportunities in Plant Agriculture available to incoming graduate students.

Of particular note there is the establishment of the Walter and Laura Scott Tree Fruits Research & Education Fund. (More information on this Fund can be found on page 27 of this publication in the article titled, “A Gift That Will Bear Fruit: Orchard's Bequest to Create the Walter and Laura Scott Tree-Fruit Research and Education Fund.”) By way of background, Laura Jane Scott generously provided a gift of over $500,000 through her estate to the University of Guelph to be directed for tree fruit research and education. The Department of Plant Agriculture is currently seeking applicants to fill a GRA position at the MSc or PhD level. Successful applicants will join a team of scientists specializing in tree fruit research (pomology, breeding, or post-harvest).

Screening of applicants will begin June 1st, 2007 and continue until a successful candidate is identified. For information about graduate school admissions applicants are being directed to http://www.plant.uoguelph.ca/grads/index.html.

For assistance regarding admission in graduate studies in Plant Agriculture contact Jean Wolting (jwolting@uoguelph.ca). For the Walter and Laura Scott award interested applicants may also correspond directly with members of the research team on tree fruits that includes Prof. J. A. Cline (jcline@uoguelph.ca), Prof. J. Subramanian (jsubrama@uoguelph.ca), or Prof. G. Paliyath (gpaliyat@uoguelph.ca).

Continued on page 3...
In addition to the Walter and Laura Scott funded GRA, the university has provided funds for five new PhD candidates (restricted to domestic students) to commence studies in Plant Agriculture by the fall of 2007. The four professors receiving these awards include Dr. Istvan Rajcan (irajcan@uoguelph.ca), Dr. Gopi Paliyath (gpaliyat@uoguelph.ca), Dr. Lewis Lukens (llukens@uoguelph.ca) and Dr. Bernie Grodzinski (bgrodzin@uoguelph.ca). Interested students should immediately contact each of these professors to learn more about the projects in their respective groups that are being funded. This is a great, one-of-opportunity to obtain lucrative PhD support.

Another interesting development at Guelph is that the manner in which major university awards will be administered is changing as we write this update. New rules and guidelines will be in place by the next newsletter. In spite of the administrative changes much remains business as usual. In this regard, I congratulate heartily once again those students who have soldiered on, completing their studies, competing and receiving special recognition in the form of awards and scholarships from many sources including the scholarship programs of the federal and provincial governments and the university.

We are also welcoming a number of new students in the Spring 2007 including:

Fariba Shahmir, PhD, with Peter Pauls

Rafiqul Islam, PhD, with Peter Pauls

Emily Green-Tracewicz, MSc, with Clarence Swanton

Lin Li, PhD, with Matthijs Tollenaar

Joe Martin, MSc, with Peter Pauls

Tian Ling, MSc, with Barry Micallef and Bernie Grodzinski

Continued on page 4...
Many hardy congratulations to students who have graduated during the Winter 2007 including:

**Asheesh Singh**, PhD, E.A. Lee, advisor  
*Quantitative trait loci mapping in maize (Zea mays L.) using a novel mapping population approach*

**Adam Queen**, MSc, W. Deen, advisor  
*Identifying causes of non-uniform establishment of Red Clover underseeded to Winter Wheat*

**Noe Ortiz-Uribe**, PhD, B. Grodzinski, advisor  
*Anatomical and physiological changes of snapdragon (Antirrhinum majus L.) after inoculation with Pythium aphanidermatum*

**Julie Laplante**, MSc, F. Tardif, advisor  
*Resistance to acetohydroxyacid synthase inhibitors in foxtail species in Ontario*

**Bandula Karunanayake**, PhD, W. Deen, advisor  
*Aggregate size effects on early season corn (Zea Mays) root growth and biomass accumulation*

**Evan M. Elford**, MSc, E.M. Lyons, advisor,  
*The effects of perennial ryegrass overseeding on weed suppression and sward composition*

Our special congratulations go to:

**Eric Page**, PhD, awarded an NSERC PGS D  
**Benjamin Chapman**, PhD, awarded an OGS  
**Sarathi Weraduwage**, MSc, awarded an OGS

We have one new student with an award starting in Spring 2007:  
**Rafiqul Islam**, PhD, was awarded an NSERC PGS D

Thus as the Co-ordinator for Graduate Studies for Plant Agriculture, I have many positives to relate to our external consultants. More news to come in the Fall, obviously.

Cheers 
Bernie Grodzinski
Golsa Samii Saket

I was born on April 9th, 1983 in Tehran, the capital city of Iran. I have two sisters and I am the youngest child of a family of five.

I grew up playing with animals and plants, climbing trees, and chasing bugs. These good memories from my childhood, and also my interest in genetics which started from my 2nd year of high school, led me to choose Agronomy and Plant Breeding as my undergraduate major at university.

I received my BSc degree from Tehran University, which is in a rural area of my home town, Tehran. On February 19th, 2006, a year after completing my undergrad program, my family and I immigrated to Canada. I started my MSc with Dr. Istvan Rajcan in May 2006 on “Development of high oil soybeans for biodiesel markets using Nuclear Magnetic Resonance and molecular markers.”

In my spare time I like to spend time with my family and friends, watch movies, read Persian poems, swim, ski, etc.

Renee Cloutier (PhD candidate with B. Grodzinski) - placed 3rd and won $1,000 in the Student Oral Poster Competition on May 1st at the Ontario Centres of Excellence 2007 Discovery Conference at the Toronto Metro Convention Centre.

David Johnston Monje

Biology was a fascination for me since growing up surrounded by tropical plants, animals, and fish in Jamaica where my father was working as an agriculture consultant for CIDA and USAID. It took some time for me to translate this vague love of nature into professional aspirations however.

It wasn't until I was a teenager in an Ottawa high school that I started realizing biology, and specifically plants, could be put to human use.

Science fiction and an interest in international development made me realize that plant biotechnology poses great potential for improving the way the developed world works, while offering potential boons for the improvement of the livelihoods of people in less developed countries. It also seemed like it would help me pay the bills.

This mix of motivation took me through a biology degree at the University of Ottawa, an internship at the International Plant Genetic Resources Institute, a Masters degree in botany at the University of British Columbia, another internship, this time at the International Potato Research Institute in Peru, and now here at the University of Guelph working on a PhD in Plant Science.

Working with Manish Raizada, we hope to improve the nitrogen fixing potential of microbes within modern corn varieties. Will we be able to improve the agricultural productivity and sustainability of the developed and developing world? Wait around a couple years and see!
Where Are They Now?

A new feature, “Where Are They Now?” will pop up once in a while in our newsletter. We will use this feature to showcase the accomplishments of our Grads once they graduate. It seemed appropriate that our very first “Where Are They Now?” feature should be about none other than our Chair.

Dr. Rene Van Acker

The Van Acker Family in Banff

Susie, Serena (age 6), Daniel (age 9), Chloe (age 12), and Rene.

I received a BSc (crop science) in 1990 and a MSc (weed science) in 1992 (with Clarence Swanton as my MSc supervisor). My PhD was from the University of Reading in the UK. My education at Guelph certainly gave me a very strong basis for my PhD and it gave me a broader perspective on agriculture, thanks in part to the crop tour course, but more so because of the efforts of excellent professors including many who are currently in our department.

Continued on page 8...
I was influenced by Clarence Swanton and his positive attitude and his willingness to explore ideas. I was inspired by Ann Clark and her willingness to question the status quo and her ability to work with community groups. And I was inspired by Peter Pauls who allowed me to do an undergrad project in his lab even though my lab skills were poor at best, he demonstrated great patience and caring for students. I was also inspired by my fellow students at Guelph and I enjoyed the fellowship with other grad students, all of whom have gone onto to make contributions to agriculture both in Canada and around the world.

After completing my MSc in 1992, my wife Susie and I (Susie also completed a MSc in crop science in ’92) went to England where I pursued my PhD at Rothamsted and the University of Reading with funding from a commonwealth scholarship. Susie worked in England as the lead research technician in the biochemistry lab of Dr. Jim Barber at Imperial College. I completed my PhD in 1996 and was successful in getting a position as an assistant professor in the Department of Plant Science at the University of Manitoba where I worked for over 10 years teaching at the diploma, undergrad and grad level, conducting research, supervising graduate students and doing some extension work. In the summer of 2005 the position of chair of Plant Agriculture was re-advertised and I applied. I was very happy to have the opportunity to return to OAC and Ontario for both personal and professional reasons.

I am currently Professor and Chair of the Department of Plant Agriculture.

I am married to Susie, who worked for many years as a research technician in Winnipeg but has just this year completed her B.Ed. and plans to be a high school teacher. We have three children aged 12, 9 and 6 and we live in Guelph.

If you would like to see one of our past grads featured please drop them a line and have them send their feature article and picture to me at:

dhilborn@uoguelph.ca
~ SCIENTIFIC BULLETIN BOARD ~

**NSERC AWARDS**

**Professor Gopi Paliyath**  
NSERC Discovery Grant for $20,000/yr for 5 years  
NSERC Research Tools and Instruments Grant for $24,950

**Professor Peter Pauls**  
NSERC Discovery Grant for $35,000/yr for 5 years

**Professor Manish Raizada**  
NSERC Discovery Grant for $32,000/yr for 2 years

**Professor Praveen Saxena**  
NSERC Research Tools and Instruments Grant for $52,118

**Professor Barry Shelp**  
NSERC Research Tools and Instruments Grant for $52,118

**Professor Thys Tollenaar**  
NSERC Discovery Grant for $35,000/yr for 5 years

**Professor Dave Wolyn**  
NSERC Discovery Grant at $32,000/yr for 5 years  
NSERC Research Tools and Instruments Grant for $52,118

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**Rick Upfold** is the new Curriculum Advisor for the Advanced Agricultural Leadership Program (AALP), a program offered by The Centre for Rural Leadership (TCRL). Up to 30% of Rick’s time will be spent working with the AALP Program and its participants. The AALP program plays a very important role in preparing agri-food industry leaders to deal with the challenges and opportunities the sector faces.

**Seed of the Year finalists for 2007**

Four Canadian seed varieties have been named as finalists in the third annual Seed of the Year competition.

Two of the varieties were developed at the University of Guelph by Plant Agriculture researchers (OAC Rex—white bean, developed by Prof. Tom Michaels and technician Tom Smith and Venture—processing peach, developed by Prof. Jayasankar Subramanian, Dr. Neil Miles and Ken Slingerland-OMAFRA). AC Barrie—hard red spring wheat and Chapais—barley are the other seeds nominated.

Raizada Lab receives Ontario Research Fund Grant

The Raizada Lab has been awarded a 4-year Ontario Research Fund (ORF) grant to alter and understand corn development in order to raise yields and reduce nitrogen fertilizer input costs. The grant is in collaboration with Profs. Steven Rothstein, Joe Colasanti, Thijs Tollenaar and Elizabeth Lee.

Raizada Lab receives NSERC CRD Grant

The Raizada Lab has been awarded a 4-year NSERC CRD grant to alter corn development in order to raise yields and reduce nitrogen inputs. The grant is in collaboration with Profs. Steven Rothstein and Joe Colasanti. Dr. Steve Chatfield, a research associate in the lab, played a major role in this grant.

Raizada Lab receives NSERC Discovery Grant

NSERC is extending our basic research work on Arabidopsis regeneration by renewing our NSERC Discovery Grant for 2 years in order to complete current projects. This research is based primarily on the work of Dr. Steven Chatfield in the lab.”

Professor Bernie Grodzinski presented a guest lecture at the Smithsonian Institute in March 2007 entitled “Controlling Plant Productivity in a CO2 Enriched World: Lessons to be Learned from a Century of Experience in Agriculture.

American Society of Horticultural Science (ASHS)

OUTSTANDING VEGETABLE PUBLICATION FOR 2006


Professors McKeown and McDonald and Sean Westerveld will be honoured during the 104th ASHS Annual Conference at the Westin Kierland Resort in Scottsdale, Arizona on Monday, July 16th, 2007. For more information on the ASHS Annual Conference go to http://www.ashs.org/annualmeeting/index.html
Fruits, Vegetables and Disease Prevention
Gopi Paliyath

Human evolution may potentially be influenced by the dietary choices early hominoids may have made. Humans are omnivorous by nature, and consumption of readily available fruits, roots, tubers, etc. could potentially have been a normal dietary event as in some of the native tribes that still practice a nomadic life style. Consumption of large amounts of fruits may have been a normal routine, as there were no means of storing the fruits beyond a short period. The components of fruits provided the nutritional components as well as the secondary plant metabolites that we recognize as the nutraceutical components today. These include the colour components such as anthocyanins, various types of phenolic components, carotenoids that include lycopene, carotenes, and xanthophylls, various types of terpenoid components, soluble and insoluble fibre that act as probiotics and several other secondary plant products. Consumption of foods containing such ingredients can beneficially affect the physiology of humans, the mechanisms of which are being unraveled in recent studies.

The changes in lifestyle or adaptation of a lifestyle can influence the development of several chronic degenerative diseases that include cardiovascular diseases, cancer, neurodegenerative diseases, etc. Decreased capacity to detoxify activated oxygen species produced within the body is a major cause for the development of such diseases. Though genetic susceptibility is an important factor that influences the increased chances of developing such diseases, it is believed that at least a third of such cases are preventable through the adaptation of a healthy lifestyle. In general, several governmental agencies have recommended the adaptation of an active lifestyle with the consumption of a minimum of five servings or more of fruits and vegetables or their products along with a regular diet.

By their chemical nature, many of the nutraceutical components such as the anthocyanins and carotenoids are very strong antioxidants. Anthocyanins present in fruit wines produced from blueberry, cherry and blackberry showed very strong superoxide and hydroxyl radical scavenging capacity. The anthocyanins in Merlot wine also showed antiproliferative properties against the estrogen-receptor positive breast cancer cell line MCF-7. Further studies showed that the anthocyanins can interfere with the calcium homeostasis within the cancer cells making them susceptible to necrotic cell death. Under normal physiological conditions, the cytosolic calcium concentration is precisely regulated and maintained at low nanomolar levels. In response to hormones or growth regulators, the cytosolic calcium increases transiently, which is brought back to the normal levels by active pumping of calcium into the storage areas. However, in response to anthocyanin treatment, breast cancer cells show a prolonged increase in cytosolic calcium that may disrupt mitochondrial function leading to cell death.

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Such an effect was not observed in normal cells indicating the selective nature of the anthocyanin effects. Cancer cells were also transplanted into athymic mouse models and tumour development and progression monitored in control and anthocyanin-fed mice. In such studies, anthocyanins isolated from Merlot grapes were more efficient than those isolated from the Merlot wine in arresting the growth of estrogen-receptor negative breast cancer tumours. We are also evaluating the biological effects of anthocyanins isolated from high polyphenol grapes and novel sour cherry lines developed at the Vineland Research Station. Further studies are needed to evaluate the bioavailability and efficacy of anthocyanins.

Research Collaborations with Drs Helen Fisher and Jay Subramanian (Plant Agriculture) and Kelly Meckling (Human Health and Nutritional Science)

Graduate Students - Fatima Hakimuddin and Jissy Jacob (Department of Food Science)

Publications:


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Intracellular calcium changes after red wine polyphenol (anthocyanin) treatment. Intracellular calcium levels were measured in live cells via confocal laser scanning microscopy using the calcium indicator dye Calcium Green-2. MCF-7 (breast cancer cell line) and MCF-10A (normal cell line) cells were loaded with Calcium Green-2. Polyphenols (50µg) were added to the cells after basal images were recorded. Images of MCF-7 (Figure A) and MCF-10A (Figure B) cells collected every four minutes are shown. The number in the lower corner of each image represents the time (min) after addition of anthocyanins.
Dry Season Vegetable Production in Ghana
Mary Ruth McDonald

Hot and dry growing conditions are not the best for vegetable production, but with irrigation water and some training, villagers in Ghana’s Upper West Region are growing and selling vegetables and even producing vegetable seed (Fig. 1).

In February, I had the opportunity to travel in Ghana to meet with the Ghanaian co-operators (Fig. 2) and see the developments in vegetable production. What I saw and heard made it clear that growing more vegetables means higher incomes, better nutrition and more children in school, in one of the poorest regions of the country.

The increase in dry season vegetable production in some villages in the Upper West Region of Ghana was made possible through a partnership between the Canadian Society of Horticultural Science and the Ghanaian Institute of Horticulturists. The project began six years ago with CIDA funding through the Agrology Institute of Canada. Funds were provided to support the work of Ghanaian faculty in cooperation with staff of the Ministry of Food and Agriculture to provide farmer field schools and train the trainer sessions on irrigated vegetable production.

Some villages in the Upper West Region have access to irrigation water as a result of small dams that were constructed to collect water during the rainy season. As part of the project, villagers were trained in setting up seed beds, transplanting vegetables, producing compost, making neem extracts for pest control, and using mulches to keep the soil cool. Traditional crops are grown, such as cowpea, eggplant, okra and tomatoes. Newer crops, such as onions, carrots and cabbage have been introduced because they bring in more money, and because they spread out the season, so the market isn’t flooded when all the tomatoes ripen at once. Recently, there has been an effort to encourage the production and consumption of orange-fleshed sweet potato to increase the amount of beta carotene (vitamin A) in the diet.

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Sustainable production practices have also been a focus of the training. A recent survey conducted by the project team showed that between 86 and 92% of farmers that had attended the farmer field schools had adopted the use of compost and mulches and used neem for crop protection. The success of the project has been noticed on many levels. The Ministry of Food and Agriculture would like to see the project expanded to additional villages, and travelers to the region are reporting more vegetables in the local markets.

The villagers, extension staff, and Ghanaian researchers all report that increased production of vegetables has other advantages. Growing and selling vegetables during the dry season provides enough income to keep young people working at home, in the Upper West Region, instead of traveling south where the risks of contracting Guinea worm and HIV/AIDS is greater. Many of the farmers are women, and an improvement in gender equity, likely tied to the increased income, has been noted.

Expertise for this project was provided by the project coordinators, Gustav Mahunu and Abdul-Halim Abubakari from the University for Development Studies at Tamale, and Patrick Kumah from Kwame Nkruma University of Science and Technology at Kumasi, Ghana. Close cooperation with staff of the Ghanaian Ministry of Food and Agriculture has allowed further delivery of Train the Trainer sessions and farmer field schools. The team in Canada includes Dinah Ceplis, Assiniboine College, Protege la Prairie, Man., Dr. Merv Pritchard, University of Manitoba, Winnipeg, Man., Jose Owen, AAFC, Batouche, N.B., and myself, Mary Ruth McDonald, Department of Plant Agriculture, University of Guelph. I traveled in Ghana with Merv Pritchard, for two weeks in February.

As in all production systems, there is research to be done and improvements to be made. Demonstration trials have been set up to compare the effects of compost, neem and commercial fertilizers on nematode suppression and yield. Garlic is a popular ingredient in food, but garlic ‘seed’ is hard to come by. A trip is planned for the Ghanaian cooperators to collect garlic and seed of other vegetables in neighbouring Burkina Faso. Fencing is essential to protect the vegetables from foraging animals. Mud fences are used (Fig. 3), but...
building them is hard work and they wash away every year in the rainy season. Harvesting branches to top the fences is not environmentally friendly. Chain link fences may be the answer, and discussions have started on accessing micro credit to cover the costs. Drip irrigation conserves water and greatly reduces the time and effort involved in watering the crops (Fig. 4). Demonstrations of simple drip irrigation systems have convinced the farmers of its usefulness, but again, investment through micro credit is needed.

A relatively new development has been cooperation between the horticulturists and the Ghanaian Animal Producers association plus information sharing between Ghana and Tanzania. Farmers who grow vegetables may also raise animals. In fact, as income increases, farmers purchase animals to further add to the food and resources of the family. Animals can also utilize plant material from the vegetable crop. Thus, the entire farm system is taken into consideration.

This was my first trip to Ghana and it was a wonderful opportunity to see the improvements that agriculture can make in people’s lives. The project certainly demonstrated the advantages of cooperative work including villagers, extension staff, faculty at national universities, and Canadian cooperators. The project currently has funding for another year, but we anticipate an extension until 2010.
Redefining Drive Letters in Windows XP
by Jim Hoare, IT Tech.

Overview

Having a computer logged into the Novell server forces the first networked drive letter to be ‘F.’ This can conflict with dynamically assigned storage devices like USB memory sticks (flash drives). Windows XP will attempt to assign a drive letter to that device without regard to the ‘mapped network’ drives and may result in a USB device not being found even though the device driver installs successfully.

The following document describes how to use Windows XP built in ‘Disk Management’ to assign a different drive letter to a device that will facilitate the resolution of the drive letter conflict. Note: you must be logged in as “administrator” or a member of the “Administrators” group in order to complete this procedure.

A general recommendation is to keep drive ‘E’ available for various ‘transient’ USB devices that will be connected to the computer. This could mean reassigning a DVD drive from ‘E’ to say drive ‘V.’

1. The simplest way to open Disk Management is to right mouse click on ‘My Computer,’ select ‘Manage’ from the submenu, and then select ‘Disk Management’ on the left pane as shown in Fig. 1.

Fig. 1. Starting Disk Management
Continued from page 17...

2. Position the mouse pointer over the desired device, right mouse click and select ‘Change Drive Letter’ from the submenu as shown in Fig. 2. Click on the ‘Change’ button and then use the pull down selection box to choose the new drive letter.

Remember not to choose any letters that are being used for other mapped drives.

For further details on disk management in Windows XP, click on ‘start’ and then ‘help and support.’ Type in ‘disk management’ in the search window.
The popularity of using vegetatively propagated bedding plants in containers of all shapes and sizes has grown dramatically in the past five years. Typically, new plants, series or flower colours are introduced by breeders from around the world to the North American market place during the annual ‘California Pack Trials’ held each April. Performance under Ontario spring greenhouse and summer outdoor conditions is of great importance to both wholesale and retail growers. Performance characteristics include earliness and uniformity of flowering, flower size, growth habit, and vigour. Growth and flowering performance in large containers outdoors will be evaluated this summer both in Vineland and Guelph. The project is being funded by the Canadian Ornamental Plant Foundation, the Canadian Greenhouse Conference, plant breeding firms, and Sungro and ITML both allied trades partners. Growers and industry representatives attended an Open House in Vineland on May 4th.

More information on Open House dates will be coming your way soon.
A sure sign of spring’s arrival on the marsh is the gathering together of growers, academics and sales people for the Annual Muck Growers Conference. The parking lot of the Martyrs of Japan Church in Bradford was full of new tractors and the main display room was buzzing with conversation on both days of the conference as growers caught up and discussed hot topics such as the amazing price of onions.

Growing an onion or a carrot is a challenging project and the full speaker room on both days proved that growers are interested in gaining every bit of new knowledge that will make that task more rewarding. Two full days of presentations on topics ranging from climate change to controlling weeds, insects and diseases on onions and carrots were well received. Speakers from Wisconsin and Michigan as well as our own Department of Plant Agriculture grad students and staff made presentations on onion breeding, seed treatments and weed control as well as the changes to crop insurance, hort crop safety net programs and the affects of global warming.

Attending the Muck Vegetable Conference, including the lunch, is free. All the expenses associated with the two day event are covered by close to 100 sponsors. The conference is organized by the Holland Marsh Horticultural Advisory committee, Chairman Ross Belfry, and assisted by the staff at the Muck Crops Research Station. The speaker program is organized by Mary Ruth McDonald.

The Weed Guys: Bernie Zandstra-Michigan State University, Clarence Swanton and Kevin Chandler-University of Guelph

Mary Ruth McDonald-U of G with Jeff Holmes of Holmes Agro Ltd.
Continued from page 20...

Shawn Janse and Rick Upfold-U of G

Onions from the station variety trial

Shiny new tractors in the equipment display

Sean Westerveld-U of G who presented Leaf blight & nitrogen management for the best yields in carrots

John Jacques, past president of the OFVGA
Stump Picking at the Muck Crops Research Station

Farmers are familiar with the annual spring ritual of picking rocks. The action of the frost over the winter causes rocks anywhere from softball-sized to giant behemoths to push up leaving the rock picker to wonder, usually out loud: “Where did that come from?” All able hands, including children, get involved with the next step. The newly emerged rocks are then picked up off the field, tossed into the loader on the tractor and dumped in the fence row on top of rocks that your grandfather picked.

At the marsh there is a different twist to the story. Here, we pick stumps. Last fall, new tiles were laid and this process brought some REALLY BIG stumps to the surface. Now imagine being newly arrived in Canada from Africa, just getting used to saying “garbage” instead of “trash,” discovering that milk comes in bags and driving in snow for the very first time. On top of all that your new co-workers invite you to go outside with them and help pick stumps. That was the case for Mary Ruth McDonald’s two new post-doctoral fellows, Michael Tesfaendrias and Catarina Saude. We would like to introduce you to Michael and Catarina and share their stump-picking adventure in pictures with you.

(Catarina and Michael are featured on the following pages.)

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Continued from page 22...

Tyler and Michael working on the stumps.

Shawn Janse

Michael & Tyler pick up a heavy one

The wagon is full
Hello, I am Catarina Saude and I was born and raised in Mozambique, a southern African country, by the Indian Ocean. My relationship with plant pests started when I studied Agriculture sciences with emphasis on plant production and plant protection at the Faculty of Agronomy, University of Eduardo Mondlãna, in Maputo, the capital city of Mozambique. After graduation, I worked as a teaching assistant in the Department of Plant Protection teaching basic plant protection courses.

In 1994, I received a scholarship from the African American Institute from the USA for a Masters degree in Plant Pathology in the Department of Plant Pathology, Oklahoma State University. For my Masters research, I investigated the effect of organic amendments produced from Brassica spp. on the germination of sclerotia of Sclerotium rolfsii, the causal agent of southern blight of peanut. While in my masters program, the departments of Entomology and Plant Pathology were merged. When I finished my program, the Department of Entomology and Plant Pathology offered me an assistantship to pursue my PhD. For my doctoral research, I studied the biology of the fungus Sclerotium rolfsii. Field trials were conducted to evaluate the effect of inoculation time of peanut cultivars at different developmental stages with sclerotia of S. rolfsii and its effect on disease severity and yield. Greenhouse studies were conducted to evaluate the effect of calcium on peanut pod breakdown caused by the fungus. Laboratory studies were also conducted to evaluate the genetic variation among isolates of S. rolfsii from different hosts using RAPD-PCR, and evaluated oxalic acid production and pathogenicity of isolates of S. rolfsii to peanut.

In 2003, I moved to East Lansing Michigan, to work as a postdoctoral research associate at Michigan State University, under Dr. Mary Hausbeck. In Michigan I worked with several fungal pathogens on vegetable crops including carrots, asparagus, and parsnip. I conducted field surveys and identified plant diseases of vegetable crops produced in both mineral and muck soils. I worked in Michigan until August 2006 and returned to Mozambique. In March 2007, I joined Dr. Mary Ruth McDonald’s research team...
Continued from page 24...

team at the Muck Crops Research Station as a postdoctoral researcher working with diseases of vegetable crops from both muck and mineral soils.

My life in the past years has been full of excitement, challenges and wonderful experiences. I have worked with farmers at both ends of the agricultural spectrum. In Mozambique I worked with farmers with half to one hectare of land who raised crops for subsistence, using few or no inputs at all. Whereas, in Oklahoma and Michigan, I worked with commercial growers whose average field size was 10 to 20 acres and used all the advanced technology in their operations and usually lived off-farm. Here on the Holland Marsh, growers also have average field sizes of 10 or 20 acres but usually live on-farm.

I look forward to learning about farm practices and plant diseases in the Holland Marsh and exploring Ontario and understanding Canadian cultural aspects, which are new to me.

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**Plant Agriculture Staff Development Fund**

The Plant Agriculture Staff Development Fund committee has chosen the successful applicants in the spring 2007 round of awards. This fund was created and continues to be supported by staff, as well as the Department, in order to provide financial assistance for skills development and training for full time staff outside of that which they must attend on behalf of the Department in the normal course of their duties.

The next deadline for applications is November 1st, 2007, but applications can be submitted throughout the year.

Congratulations to successful applicant Rob Grohs who is attending the Simcoe Toastmasters course.

*Peter Smith and Tannis Slimmon*

*Plant Agriculture Staff Development Fund committee*
Michael Tesfaendrias

I was born and raised in Asmara, Eritrea. My career in agriculture started in 1989 in Eritrea where I worked as plant protection officer working with growers of banana, vegetables and cereals. In 1996, I obtained a scholarship and went to South Africa where I graduated with a BSc Agric. in 1999 from the University of the Free State. Starting in 2001, the department of Plant Sciences at the University of the Free State offered me a student assistantship to pursue my studies (MSc). My master’s research study was to characterize diseases of kenaf (Hibiscus cannabinus) with specific reference to diseases caused by Pythium and Botrytis cinerea.

While working as a research assistant at the Centre for Plant Health Management at the University of the Free State in 2003, INTSOMIL (International Sorghum and Millet) awarded me a scholarship for my PhD. My thesis provided a valuable insight into grain mould of sorghum in the context of biotic and abiotic environmental factors that may contribute to this phenomenon and the effect it has on grain quality. Although sorghum is a staple food in most parts of Africa, little attention was given to the effect of grain mould fungi on grain quality. The results from my research indicated correlations between grain mould fungi and certain grain quality parameters such as the milling and malting quality and the presence of mycotoxins in sorghum grains. After graduating in September 2006, I moved to Canada to join my wife Yordanos.

In March 2007, I started my post doctoral fellowship in the Department of Plant Agriculture, University of Guelph at the Muck Crops Research Station with Dr. Mary Ruth McDonald. During my post-doc I will be working in the plant disease diagnostics lab, scouting for plant diseases and insects, running disease and insect forecasting models. I will also conduct research work such as the effect of soil fertility on celery late blight and the effectiveness of fungicides in controlling Pythium damping off on different vegetable crops.

I’ve already had a fabulous first winter in Canada and I’m looking forward for my first cropping season at the Holland Marsh.
A Gift That Will Bear Fruit: Orchard's Bequest to Create the Walter and Laura Scott Tree-Fruit Research and Education Fund

The late Laura and Walter Scott, who owned an apple orchard near Lynden, Ontario, have bequeathed a healthy endowment that will provide yearly funding for education and research in tree fruits at the University of Guelph. While the Scotts did not attend college in Guelph, Walter did work on campus and they retained a life-long affinity to the educational focus of the Ontario Agricultural College (OAC) and the Macdonald Institute. Laura believed that the agricultural traditions of the province need to be nurtured and preserved, and left a legacy for students to continue to appreciate the importance of rural life and the production of food.

Laura Scott’s grandfather lived on Mont Street in Guelph and owned property in that area. John Henry Metcalf, Laura’s father, built the house at 16 Extra Street in Guelph where she grew up. Laura graduated from Guelph Collegiate Institute in 1934. After Laura married Walter Scott of Galt, they moved to the Lynden area to make their home and Laura began her career as a high school teacher. She taught English literature and Latin at Dundas District High School until she retired in 1968.

The University of Guelph’s Ontario Agricultural College and Department of Plant Agriculture have recently established the Walter and Laura Scott Tree-Fruit Research and Education Fund. The Department of Plant Agriculture is currently seeking applicants to fill a Graduate Research Assistant position at the MSc or PhD level. The successful student will join a team of scientists specializing in tree fruit research (pomology, breeding, or postharvest) and work in the general areas associated with tree fruits including, but not limited to, rootstock physiology, water relations, plant bio-regulators, physiology of rain-induced fruit cracking, molecular breeding/physiology/postharvest, and biochemistry and molecular biology of fruit development. More details of this endowment can be found at the following link http://www.plant.uoguelph.ca/grads/gra/gra.html.

For assistance regarding admission in graduate studies in Plant Agriculture contact Jean Wolting (jwolting@uoguelph.ca). For the Walter and Laura Scott award interested applicants may also correspond directly with members of the research team on tree fruits that includes Prof. J. A. Cline (jcline@uoguelph.ca), Prof. J. Subramanian (jsubrama@uoguelph.ca), or Prof. G. Pallyath (gpaliyat@uoguelph.ca).
CONGRATULATIONS
Future Scientists

Bindu Kovvuru and Supritha Nilam

First Place – Intermediate Division
Best Project – Ontario Horticultural Association Award
Outstanding Achievement – St. Catharines Jaycees Secondary School Award

Two students from Sir Winston Churchill Secondary School in St. Catharines, Bindu Kovvuru and Supritha Nilam, did a project entitled ‘The Secret of Seed Germination’ under the mentorship of Dr. Jayasankar Subramanian at the Department of Plant Agriculture – Vineland during the fall of 2006. The students presented their project at the recent Niagara Regional Science and Engineering Fair held on March 23rd and 24th, 2007.

CONGRATULATIONS BINDU AND SUPRITHA

Left to right: Bindu Kovvuru and Supritha Nilam pictured with Dr. Jay Subramanian with their awards for their research demonstrating the need for gibberellic acid during seed germination and further growth by using mutants of Arabidopsis, the seeds of which were generously provided by Dr. Steven Chatfiled, research associate with Dr. Manish Raizada in the Department of Plant Agriculture.
Vineland Centennial Horticultural Scholarship

During 2006, the Centennial Year of the Horticultural Experiment Station-Vineland, friends of the station established a scholarship of $1,500 to assist MSc and PhD graduate student research that is relevant to the horticultural industry of Ontario. MSc or PhD students conducting research under the supervision of a University of Guelph faculty member, that is relevant to the horticultural industry of Ontario and whose research is being conducted in part at the Vineland Horticultural Experiment Station, are eligible to apply. The recipient will be selected on the basis of quality and relevance of the graduate research and academic achievement. Apply by letter to OAC Awards Office, University of Guelph by April 1st with a letter (no more than 2 pages) outlining your research project and the proposed benefit to the horticultural industry and include a letter of reference from your advisor.

An update on Josh Segeren who was featured in our June 2006 newsletter for winning First Place in the Chatham-Kent Regional Fair. Josh contacted Dr. Hugh Earl for help with his project when after the first phase of his experiment he found only minor treatment effects. Josh is a 15-year-old, grade 9 student at John McGregor Secondary School in Chatham, Ontario, and has been involved in science fairs for four years.

In the Canada Wide Science Fair held in Truro, Nova Scotia May 12th to 27th, Josh won the following:

- Gold Medal in the Intermediate (Grades 9 and 10) Biotechnology & Pharmaceutical Sciences Division - $1,500
- EnCana Platinum Award for the Best Intermediate Project (from all divisions) - $5,000
- University of Western Ontario Scholarship (with the gold medal) - $2,000

For more information on the Science Fair go to: http://www.cwsf2007.ca/

Josh won with his project "Soy Solution: Pre-Imbibitional Moisture Effects on the Injury Resistance of Soybeans." The purpose of the experiment was to determine the effects of pre-imbibitional moisture levels of soybean seeds on the ability of the seeds to resist imbibitional chilling injury and/or dehydration injury, as well as to test germination in ideal conditions.

Maybe next year Josh will go to the International Fair as part of Team Canada!
SOCIAL CLUB NEWS

Plant Sale

A BIG Thank You to the Social Club and all PA faculty, staff and students who supported the Plant Sale held May 17th. With your help the plant sale was a GREAT SUCCESS. Over $1,000 was raised and that money will be used to subsidize future Departmental events. Plants that were left over were donated to the Community Garden.

More News

Ice Cream Social

An Ice Cream Social is planned for the afternoon of Wednesday, June 13th. More details to follow from your Social Club.

STORMS Hockey game
March 14, 2007

A few pictures from the game that was attended by Grads, Staff and Faculty. The Guelph Storms played the Kitchener Rangers in Guelph. The Storms lost to the Rangers 4 to 1.
COMING EVENTS

2007

ASHS Annual Conference - July 16 to 19, 2007, Westin Kierland Resort and Spa, Scottsdale, Arizona. For more information go to: http://www.ashs.org/annualmeeting/

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<td>3:00 pm – sunset</td>
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<td>Rain Date – Thursday, July 26</td>
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SIMCOE RESEARCH STATION

Wednesday, July 25, 2007

Producers, industry representatives and media are invited to attend an Open House featuring vegetable research and extension activities at the Simcoe Research Station.

SCHEDULE:

3:00 pm:
- Field tour of research plots focusing on herbicide research, the minor use program, pepper varieties, and cucumber downy mildew

5:30 pm:
- Complimentary barbecue

6:30 pm:
- Twilight tour of research plots focusing on asparagus breeding, fertility research, insect pests and diseases, trickle irrigation, cover crops, and biodegradable mulches

Throughout:
- Field and irrigation equipment show by local dealerships

Advance phone or email registration is required. Please R.S.V.P. by Friday, July 13 to Ms. Judy Kelly at 519-426-7127 Ext. 323, or by email at jjkelly@uoguelph.ca. The Simcoe Research Station is located approximately 3 km east of Simcoe and 200 metres north of Hwy#3 on Blueline Road.

Farm Smart Agricultural Conference, Ontario Agriculture from a Global Perspective - August 28 and 29, 2007, Elora Research Station. For more information go to: http://www.uoguelph.ca/farmsmart/

Canada's Outdoor Farm Show - September 11 to 13, 2007, Canada’s Outdoor Park, Woodstock, Ontario. For more information go to: http://www.outdoorfarmshow.com/enter.html

International Plowing Match and Rural Expo 2007 - Leeds-Grenville County September 18 to 22, 2007. For more information go to: http://www.plowingmatch.org/

Norfolk County Fair and Horse Show - October 2 to 8, 2007, at the Simcoe Fair Grounds, 172 South Drive, Simcoe, Ontario. For more information go to: http://www.norfolkcountyfair.com/

Royal Agricultural Winter Fair - November 2 to 11, 2007, at the Direct Energy Centre, Exhibition Place, Toronto, Ontario. For more information go to: http://www.royalfair.org/
Summer in the Library

Plans are under way for the 2nd annual Campus Author Recognition program. Submissions are due by September 2007 for print or electronic books authored, edited or translated by University of Guelph faculty, staff, students, retirees or alumni. Last year there were 18 books submitted, including one from Plant Agriculture, *Journey of a Single Cell to a Plant* by Susan Murch and Praveen Saxena. Don’t miss this opportunity to have your book purchased and displayed by the library and yourself acknowledged in the Campus Author program. The program will normally honour books in their publication year however this year you may submit books published in 2006 or 2007.

Complete information and the submission form is available at [http://www.lib.uoguelph.ca/author/](http://www.lib.uoguelph.ca/author/). Also at this web address are reviews and author biographies for books submitted last year. This year’s Campus Author reception will take place on Tuesday, October 30th, 2007 in the Library. If there are questions please contact the coordinator Robin Bergart at ext. 54094 or Email: author@uoguelph.ca.

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The library is laying the groundwork this summer for an Institutional Repository for the University. The Repository will be an online means for collecting, preserving, and making available in open access digital form the intellectual output of the University’s faculty and students. MIT lists the following possible digital formats for inclusion in their repository: Documents, such as articles, preprints, working papers, technical reports, or conference papers – Books –Theses - Data sets - Computer programs - Visualizations, simulations, and other models - Multimedia publications - Bibliographic datasets - Images - Audio files - Video files - Learning objects – and Web pages.

The software being used for the Guelph repository is DSpace [http://www.dspace.org/](http://www.dspace.org/) which was developed by MIT and Hewlett-Packard and first released in 2002. Typically information is arranged in Communities which can correspond to the general structure of the University as in these examples from the University of Glasgow [https://dspace.gla.ac.uk/community-list](https://dspace.gla.ac.uk/community-list) and Cornell [http://dspace.library.cornell.edu](http://dspace.library.cornell.edu).

Continued on page 33...
An interesting example of how a repository can be used to support education is the Worldwide Greenhouse Education Project [http://www.uvm.edu/wge/]. As described in their news release – “A multi-state group of educators from the University of Vermont, University of Florida, University of Ohio, and University of Arizona was awarded a USDA grant to create a multimedia instrument for greenhouse education and have created a DSpace Digital Repository of images, software, lectures, videos complete with transcripts, and a Greenhouse Simulator [http://www.uvm.edu/wge/education.htm]. Agriculture education experts from the University of Florida also created pre- and post-test student learning outcomes evaluation instruments that are available to all greenhouse instructors and easily modified for different courses. Over 50 video clips from five different commercial greenhouse operations in four different states are available via streaming video, for download at the repository, and on DVD (for those without computer access). The central website is currently receiving about 250 unique visits per week (prior to any official advertising) and the digital repository has roughly 2,000 item views each month. The long-term goal is an active community of instructors that will not only utilize the materials currently available, but post some of their own materials for use to the digital repository.”

The Guelph Repository Project started with OVC digital images as a pilot and now includes several electronic journals - [http://dspace.lib.uoguelph.ca/]. If anyone would like to contribute to the repository or learn more about this project please contact me at ext. 54055.

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The Library Learning Commons Graduate Student Learning Initiative (GSLI) has received the Innovation Award for an outstanding new or innovative program from the Canadian Association of College and University Student Services. The GSLI is offering a number of free workshops for graduate students this summer including Introduction to SPSS and Academic Presentation Skills with special sessions for non-native English speakers. [http://www.learningcommons.uoguelph.ca/Workshops.html]. Don’t forget that the Library also offers individual tours, orientation, RefWorks classes, and research consultation for faculty and students throughout the summer. For information and schedules check the library home page News section at [http://www.lib.uoguelph.ca/] or contact me at jwanner@uoguelph.ca.
Universities around the world are developing Institutional Repositories as described in the Library News section of this newsletter. Following are some agricultural examples:

University of Vermont - Greenhouse Education Digital Repository
http://badger.uvm.edu/dspace/handle/2051/1924

Washington State University – Department of Horticulture and Landscape Architecture – Electronic dissertations and Theses
https://research.wsulibs.wsu.edu:8443/dspace/handle/2376/614

Ohio State University - Ohio Agricultural Research and Development Center (OARDC) - Books, reports, etc., Events and Seminars, Poster Presentations
https://kb.osu.edu/dspace/handle/1811/429

Message from the Chair
Continued from page 1...

Just this past week, faculty in Plant Agriculture (with leadership from Bill Deen and Lewis Lukens, and Peter Pauls, respectively) were at the foundation of two major LOI applications to Agriculture and Agri-Food Canada’s Agricultural Bioproducts Initiative Program (ABIP).

The opportunities for this department are growing (no pun intended) because of who we are and because we are good at what we do. The future is bright for Plant Agriculture. Here comes the sun.