



# UBC Department of Botany Newsletter

Number 3 July 2006 – August 2007

*Edited by Iain Taylor*



## WELCOME

This 3<sup>rd</sup> Botany Department Newsletter is a glimpse of department activities between July 2006 and September 2007. I have always been proud of being a member of what some believe is the oldest science. Botany is strong no matter what label its practitioners assume, but I think that the University of Manitoba and UBC remain with Botany as their departmental label.

Much of this newsletter is devoted to celebration and highlighting individual achievements. We have much to celebrate. The enormous award to Patrick Keeling and his colleagues to establish the Centre for Microbial Diversity and Evolution (details below) and the construction of the Biodiversity Research Centre (BRC) point to some pretty exciting times in our future. The BRC will give the UBC Herbarium a home with proper and modern facilities that will benefit all who study plant biodiversity.

While annual newsletters tend to contain old news for those who are here, they provide a link to those who have left for other pastures. I can only spread news if I receive it, so please keep us up to date with your lives and your contacts.

I am particularly looking for reflections and reminiscences on your time in the Department and at UBC? Who taught you? Whom do you remember? Where have you been since you left? Who have you lost contact with? Where are you now? My latest "best contact" is Bill McPhee (Class of 47), who told me some great stories about his time at UBC and being taught by John Davidson.

Please send your e-mail address, The paper copy is available and sent to those who so choose, but many prefer to receive the newsletter by electronic mail. Our new e-mail address is

[botalumn@interchange.ubc.ca](mailto:botalumn@interchange.ubc.ca)

Much of the news is from BTW, the Department's weekly newsletter. Thanks to the office staff (Lebby Balakshin, Veronica Oxtoby and Judy Heyes) for keeping us all in the loop.

Keep in touch! I really enjoy hearing from you.

Iain Taylor

## HEAD'S MESSAGE

As you read through this newsletter it is hard not to notice how much positive activity and leadership exists in the Department. Below I am delighted to share with you some of the significant impacts that Departmental leadership has brought about.

Iain has already highlighted the remarkable success that is the Centre for Microbial Diversity and Evolution. This initiative arose from Jim Berger referring a former student, now with the Tula Foundation, to Patrick Keeling to discuss "the next big thing". The combined vision of Patrick and the Tula Foundation led to a novel program that specifically funds postdoctoral researcher salaries to maximize the leveraging of research progress. Patrick also was instrumental in creating a new CIFAR grants program in microbial biodiversity.

Strong progress has also been made in the BioImaging Facility (BIF) which switched to an academic director in 2006. Geoff Wasteneys, a Tier I Canada Research Chair, has upgraded the staff and administration and hired a light microscopy specialist, Kevin Hodgson, who ensures that several newly purchased confocal microscopes perform optimally. Through Geoff's and Lacey Samuels' leadership the BIF was recently awarded a \$4.1 million grant from the CFI Leading Edge Fund to purchase an intermediate voltage transmission electron microscope (TEM) and several additional confocal microscopes and items. This TEM allows optical sectioning of thick specimens thus allowing 3-D reconstruction of intracellular structures. Combined with BIF's expertise in cryotechniques, this equipment will make UBC an international leader in biological imaging.

The participation of Botany in the Carl Wieman Life Sciences Education Initiative (CWSEI) is mentioned elsewhere in this newsletter. Such an award was almost inevitable given the size of the Biology Undergraduate program in the Faculty of Sciences. But one of the reasons it was awarded in the first round of competition was that there was a grass roots group of biology faculty that embraced the opportunity and wrote the proposal. Our Department is remarkable in the extent of leadership provided by rank and file faculty to curricular reform and to student centered learning. This involvement will be critical as we make major changes to first year course offerings at

the same time that we revamp how we teach. The award is for \$2 million over five years. Many of these funds will be used for hiring postdoctoral researchers aka scholars of teaching and learning. These fellows will work closely with faculty in defining learning outcomes and goals for most if not all biology courses. They will also help devise ways of measuring how well students learn in specific classes, and especially the extent to which they start to understand fundamental biological concepts on the scale from novice to expert. Prof. George Spiegelman, from the Department of Microbiology and Immunology, is coordinating this initiative, with the active involvement of the Heads and faculty of the three Biology Departments (M & I, Botany, and Zoology). We hope for nothing less than a transformation of how biology is taught at UBC. This will also involve providing more resources to the Biology program, resources that unlike those of the CWSEI, are recurring and can be used to increase the levels of administrative and TA support, to reduce the faculty to student ratio, to offer a full range of laboratory experiences. This transformation will require leadership at all levels for years to come.

Finally, I'd like to update the wider Botany community on prospects for new space. Iain has mentioned the BioDiversity Building which should be completed in 2009 and house the labs of about 10 Botany faculty members. You might be familiar with Renew BC, a provincial program that recycles older buildings, where cost effective. The Biological Sciences Building is now under active consideration for a Renew application which would result in the gutting and renovation of the West and South wings. We have been working extensively with planners to specify our future needs for research, teaching and administration. Current plans are to ultimately move about 10 Zoology and 10 Botany faculty into new labs, with renovation to start when the BioDiversity Building is online. Thanks to the leadership of many people who brought us to this hopeful point. This includes Elaine Simons, our Departmental Administrator, and Carl Douglas, Botany's former Head, who made sure that UBC planners were aware of the urgency of renovation.

All in all, big news and change from strong leadership.

Fred Sack

## DEPARTMENT NEWS

### Botany Department opens UBC Centre for Microbial Diversity and Evolution

Patrick Keeling, Brian Leander, Naomi Fast and Curtis Suttle were awarded \$7 million over several years to support the founding of the [Centre for Microbial Diversity and Evolution](#) (CMDE) at the University of British Columbia, specifically to support post-doctoral researchers undertaking basic research. The Tula Foundation is a Canadian private foundation based in British Columbia established by a UBC alumnus. In making this award, the Foundation supports researchers using the tools of molecular biology to study the diversity of microbial life and thereby contribute to our understanding of the fundamental processes of evolution.

The Tula Foundation website states “The CMDE will advance our understanding of living systems by supporting basic research into fundamental questions about the diversity, interrelationships and evolutionary histories of microbial life forms. The CMDE promotes broad-scale comparative approaches that integrate exploratory and hypothesis-driven research on bacteria, archaeans, eukaryotes and viruses. The training of research personnel in the CMDE must reflect high standards of excellence and will incorporate one or several of the following themes: molecular evolution, comparative genomics, phylogenetics, evolutionary morphology, systematics, metagenomics and ecosystem function”.

### AWARDS

Joerg Bohlmann (Associate Professor, Distinguished University Scholar and NSERC E.W.R. Steacie Fellow, Michael Smith Laboratories and Depts. of Forest Science and Botany) was awarded the 2006 *Charles A. McDowell Award for Excellence in Research*, one of UBC’s most prestigious research prizes, established in 1985 in honour of Charles A. McDowell, Professor emeritus of Chemistry and Head of Chemistry from 1955 to 1981. This award is made to an outstanding young member of the faculty of UBC who has demonstrated excellence in pure or applied scientific research. Patrick Keeling won this award in 2005.

Tony Glass (Professor emeritus of Botany) has been awarded the *Canadian Society of Plant Physiologists’ Gold Medal*. This award is made every three years to honour outstanding contributions to research. The award was announced at the Plant Canada meeting in Saskatoon. Tony will present his acceptance address at the 2008 CSPP meeting in Ottawa. Tony joins a truly distinguished group of great Canadian plant physiologists, including the late Neil Towers, who won the medal in 1973.

Jacqueline (Jacqui) Monaghan PhD candidate (Li Lab) received a *Faculty of Graduate Studies Graduate Teaching Assistant Teaching Award*.

Shannon Wright, Ph.D. candidate (Berbee Lab), received a 2 year *NSERC Industrial Postgraduate Scholarship*.

Chris Sears, PhD candidate (Whitton Lab) has accepted an RAShip from the herbarium committee for his proposal (ranked first overall!) to update the taxonomy of the ferns and fern allies.

Nyssa Temmel, Ph.D. candidate (Cronk Lab) was awarded the *2006 Botanical Society of America, Genetics Section Student Poster Award*. Co-author was Quentin Cronk.

Carsten Kuelheim, (PDF Bohlmann lab), was awarded a *Swedish Research Council Postdoctoral Fellowship*. Carsten did his Ph.D. at the Umea Plant Science Center.

George Haughn has become a member of the North American Arabidopsis Steering Committee.

Carl Douglas is the new Vice President of the Canadian Society of Plant Physiologists

Gillian Gile, Nyssa Temmel and Jackie Monaghan were awarded *NSERC Graduate Scholarships*.

Ben Gilbert, Jia Cheng, Ying Chang, Heather Esson, Miki Fujita and Cameron Carlyle were awarded *University Graduate Fellowships*.

Wyth Marshall was awarded the *Edith ASHTON Memorial Scholarship*

Hannes Dempewolf and Carolyn Marshall were awarded the *Frances CHAVE Memorial Scholarship in Botany*

Anne Bjorkman was awarded the *Samantha Hicks Memorial Prize*.

Sarah McKim was awarded the *Craig Adams Sandercock Memorial Scholarship*.

Christine Woollacott was awarded the *Vladimir J. Krajina Scholarship in Plant Ecology*

### SPOTLIGHT ON BOTANY RESEARCH

The \$7 million Tula Foundation award to the [Centre for Microbial Diversity and Evolution](#) (CMDE) was the largest research award in the history of the Department.

The Charles McDowell prize to Joerg Bohlman and Canadian Society of Plant

Physiology Gold Medal award to Tony Glass continue the high level recognition that reflects the excellence of work in the Department.

Loren Rieseberg (Tier 1 Canada Research Chair) has completed his lab set up in the Department. His primary research question is ‘how do new plant species arise?’ He is best known for successfully combining genomic, ecological, theoretical, and molecular phylogenetic approaches. He showed that new diploid species may arise through hybridization, that this mode of speciation involves significant ecological and karyotypic divergence, is rapid, and is a more repeatable or deterministic process than previously suspected. His pioneering application of genome mapping tools to natural populations of plants leads to the implication that colonization of extreme habitats by sunflowers may provide a mechanism for large and rapid evolutionary transitions. Recently, Loren’s group demonstrated that hybridization has facilitated the evolution of weediness in the common sunflower.

Faculty and students continued their prolific publishing endeavours. Most papers had the customary 1-6 authors, but a new record for departmental co-authorship (110 authors) was achieved by 8 researchers UBC who co-authored “The Genome of Black Cottonwood, *Populus trichocarpa* (Torr. & Gray)” in *Science* 313: 1596 – 1604. (15 September 2006). It is unlikely that the group will win an IgNobel Prize for Literature, given that a group of physicists won this award some years ago for a paper that had 256 authors!

Sally Otto, an Associate member of Botany, published “*A Biologist’s Guide to Mathematical Modeling in Ecology and Evolution*”. The photographic art was by Colin Bates (Ph.D. candidate in Botany).

Iain Taylor edited “*Genetically Engineered Crops: interim policies, uncertain legislation*”, published by Haworth Press Inc. New York in May 2007

A few years ago, Dr. Celeste Leander (Botany) started the *Undergraduate Research Directory (aka Ulabs)* to profile current and ongoing research in Botany and in the Faculty of Science and to help faculty to recruit undergraduate researchers for research projects such Honours theses, Directed Studies/Readings, Summer NSERC Assistantships, etc. The project went University-wide in 2006, so finding a research opportunity has become far less random and frustrating. More background is given in the Teaching section.

The [UBC Herbarium](#) web site has been upgraded. See [www.botany.ubc.ca/herbarium](http://www.botany.ubc.ca/herbarium)

New additions include:

- Vascular type specimens are now available for viewing on-line (with the other collections to follow).

- List of ways to contribute to the Herbarium through volunteering and donations.
- Framed botanical prints, cards and field presses are available for purchase.
- Updated Home page, Collection page (colour coded), and People page.
- Collections databases being constantly updated.
- BC distribution maps of the vascular plants are available on E-flora (link available on the Herbarium home page) with maps for other collections coming soon.

Many thanks to Derek Tan for all of his volunteer hours improving our web site.

The Botany Graduate Student Association annual Graduate Students' Symposium was held on March 23, in the Michael Smith Laboratories Lecture Theatre. The full programme included 22 papers, a splendid keynote address by Beverley Green and of course many long conversations during which molecular biologists learned about plants and ecologists learned the DNA was cool! Qingning Zeng and Sarah McKim won the best morning and best afternoon talk awards, respectively.

## SPOTLIGHT ON BOTANY TEACHING

As noted in the Research section, the push to involve undergraduates in research (something that has been a very active part of Botany teaching at least since 1920) continues. The *Undergraduate Research Directory (ULabs)* created by Dr. Celeste Leander (Botany) formally launched its website ([www.ulabs.science.ubc.ca](http://www.ulabs.science.ubc.ca)) with two main purposes:

- catalogue ALL current and ongoing research at UBC in one centralized location
- allow faculty to recruit Undergraduate researchers for research projects such as Honours theses, Directed Studies/Readings, Summer NSERC Assistantships, etc.

ULabs was initially for the Faculty of Science but it is now expanding to encompass ALL Faculties campus-wide through a Teaching and Learning Enhancement Fund (TLEF) grant. Research profiles have been compiled by the ULabs team from existing public information from departmental websites and/or individual faculty member's research websites. The ULabs team is actively soliciting faculty information and looking for feedback or suggestions.

UBC is excited and privileged that Dr. Carl Wieman, Nobel Laureate in Physics, joined UBC's Dept. of Physics and Astronomy in January 2007. As many of you will know, Nobel Laureates have often taken the opportunities arising from their award to move into a new direction. Dr. Wieman has begun to develop a science education project at UBC that emphasizes student experience,

stimulates inquiry and encourages measurement of educational outcomes. The Biology Programme is one of five Faculty of Science departments participating in the project's initial stage. Select courses have been re-designed and were launched in Sept. 2007.

Jacqueline (Jacqui) Monaghan's Faculty of Graduate Studies Teaching Award was the third award to a Botany graduate student since the prize was first awarded in 1996. Previous winners were Sandra Allina (1996/97) and Mark Pidkovich (2000/01). Shona Ellis has received two Killam faculty teaching prizes in the last few years so the Department continues to find outstanding teachers. No wonder enrollment in Plant Biology has risen steadily in recent years.

## MOMENTOUS MOMENTS AND NEWS

**UBC Centenary – 1908-2008.** 2008 is the centenary year of the granting of UBC's charter. There will be a commemorative book published and events, including alumni weekends in May and November. Please let us know if you are attending.

**Social life** - The Departmental social life thrives. The Botany Christmas party is back again as a fixture in the calendar. Add to that Welcome to new students, Friday lunchtime BBQ, Picnic at Spanish Banks, and of course Do-Nut Day at morning coffee on the last working of each month. To find out who works in the department just 'follow the food'!

**Curling** - The Botany Curling event was a great success EXCEPT that the Botanical Garden team won yet again!

**Recycling is alive and well** - Botany contributes to the Biology Program compost project. The compost feeds the earthworms used in first year labs, and is used to nourish the plants in our teaching gardens and in the campus landscape.

**Botany Enthusiasts Club** - The Botany Enthusiasts Club (BEC) aims to bring together undergraduate students from all over campus who share a passion for plants, fungi, and algae. We aim to spread appreciation and knowledge of plants, and provide members with the chance to learn, network, and have fun!

Who remembers the Squamish Institute?

**Botany BC** - Locals may know of Botany BC, which continues to run annual excursions to see BC's amazing botany. In 2007 some UBC Botany folks went to the weekend event in Osoyoos. If you are interested in this group, contact Elizabeth Easton at [Elizabeth.Easton@gov.bc.ca](mailto:Elizabeth.Easton@gov.bc.ca) to be included on the e-mail distribution list so that you will be notified when program and registration information is available.

**Botany 80 returns as Botany 2008** - UBC is the site of the 2008 joint meeting of Canadian Botanical Association and the Botanical Society of America. The dates are

July 25<sup>th</sup> –31<sup>st</sup> 2008. I hope that we can engineer some sort of departmental reunion, if you can still navigate the campus and find us.

## COMINGS AND GOINGS

### Luis Oliveira retired Jan 2007

Luis Oliveira first came to UBC as a Calouste Gulbenkian International Fellow in 1970 to be a Ph.D. student with Thana Bisalputra. He completed his doctoral work in 1973 and was awarded a further Calouste Gulbenkian award at the University of Porto, Portugal. Luis came back for further post-doctoral work in 1975 and was appointed to the Botany Department faculty in 1978. His research was largely concerned with subcellular effects of metals, especially aluminum, on green algae. He supervised 6 M.Sc. (Burns, Fitch, Huynh, Wong, Peat, Tornbom) and 3 Ph.D. (Nichol, Klut, and Alessa) students. Luis was much involved in the development of Biology 200 and 201, courses that are now the foundation of all biology degrees at UBC, and he lectured in first year Biology for many years. In 1988 he was awarded the Canadian Botanical Association's Mary-Elliot Award for outstanding services as Editor of the *CBA Bulletin*.

Luis specifically asked that there not be a retirement party and that his retirement gift be our donations to the SPCA. In thanking the Department he wrote: "Just a brief note to express my many thanks to all that signed the lovely super card of happy wishes and advice on the occasion of my retirement. I will do my best to follow up on all the advice. Both Julie and myself had a great time reading all the comments and looking at all the animal pictures. I am also most grateful for the contribution to the SPCA cause. We are both very fond of animals and supporters of the organization. Julie was thrilled with all the good wishes that were also extended to her. It was a pleasure to work with many of you and serve the Department throughout all those years. We will still be seeing each other. However, I wish you all a career as successful and happy as mine was. To you all my best wishes of a happy new year and the best for 2007. Luis Oliveira".

Welcome to several students, staff and post docs, including:

Sarah Inkster (Finance Office)  
 Anne Bjorkman MSc Vellend  
 Scott Black, MSc Bradfield  
 Jia Cheng MSc Ellis/Chen  
 Tina Chou MSc Bohlmann  
 Hannes Dempewolf PhD Rieseberg  
 Anna Gangaeva MSc Keeling  
 SungSoo Kim PhD Douglas  
 Angela Knopp, MSc Turkington/Fraser  
 Zorica Kotur, PhD Glass/Samuels  
 Patricia Lam MSc Kunst  
 Rui Liu MSc Jetter  
 Carolyn Marshall MSc Turkington

Tabea Weihmann PhD Li  
Yuan Yuan (Echo) Yu MSc Haughn  
Lifang Zhao MSc Kunst  
Peter Zhang MSc Adams  
Shao-Lun Liu, PhD Adams  
Emily Drummond MSc Vellend  
Hiroshi Tomimatsu PDF Vellend  
Penny White MSc Lindstrom

## RECENT GRADUATES

### November 2006

#### Ph.D.

Lee Johnson (Douglas)  
Stacey Thompson (Whitton)

#### M.Sc.

Aaron Heiss (Keeling)  
David Johnston Monje (Douglas)

#### B.Sc. in Plant Biology

Liza Anne Hartsough Baer  
Yuriko Susanna Hashimoto

### May 2007

#### Ph.D.

Alexander Culley (Suttle)  
Sandra Goritschnig (Li)  
Eiko Kawamura (Wasteneys)  
Ravi Kumar (Haughn)  
Matthew Rogers. (Keeling)  
Jeffrey Saarela (Graham)  
Guangzhi Zhang. (Sanfaçon)

#### M.Sc.

Shannon Wright (Berbee)

#### B.Sc. in Plant Biology

Matthew Cameron  
Christopher Lee  
Emrys Prussin  
Christina Turi  
Vsevolod Zaikov

## ALUMNI NEWS

I am slowly working my way through mountains of relatively disorganized paper as I try to prepare a history of the Department of Botany. Hopefully this will lead to a History of Botany in BC. To make history rather than a catalogue of dates, I need reminiscences by and about alumni/ae, faculty – past and present, and former staff members. So don't be surprised to hear more from me as these projects proceed.

In the meantime, somewhat random e-mails and chance meetings at conferences, graduation ceremonies and even on the streets of Canada have yielded the following news of alumni and former members of the Department:

**Alex Culley** (PhD Suttle) is a PDF in the Department of Oceanography at the University of Hawaii at Manoa.

**Sandra Goritschnig** (PhD Li) is a PDF at the University of California, Berkeley.

**Aaron Heiss** (MSc Keeling) entered the PhD program at Dalhousie.

**Lee Johnson** (PhD Douglas) is pursuing a law degree at McGill University.

**Eiko Kawamura** (PhD Wasteneys) is a PDF at the University of Tokyo.

**Ravi Kumar** (PhD Haughn) and **Tanya Kumar (Hooker)** (PhD & PDF Kunst) are Research Associates at the School of Biological Sciences at University of Missouri, Kansas City.

**Terri Lacourse** (PDF Vellend) is an Assistant Professor in Biology at the University of Victoria.

**Robert Prange** (MSc Stein) is a senior researcher for Agri and Agri-Food Canada in Kentville NS. He is Chair of the International Society for Horticultural Science, Commission for Sustainability through Integrated and Organic Horticulture.

**Steven Ralph** (PDF Bohlmann) is an Assistant Professor in Biology at the University of North Dakota.

**Matthew Rogers** (PhD Keeling) is a PDF at Dept. Chemical & Biol. Sciences, Queen Mary University, London, England.

**Owen Roland** (RA Kunst) and **Shelley Hepworth** (RA Haughn) are both Assistant Professors at Carleton University.

**Jeff Saarela** (PhD Graham) is a Research Scientist at the Canadian Museum of Nature in Ottawa.

**Stacey Thompson** (PhD Whitton) is a PDF in the Dept. Biological Sciences, University of Montreal.

**Bryony Williams** (PDF Keeling) was awarded a Fellowship from the Royal Society and has taken up a position at Exeter U.

**Guangzhi Zhang** (PhD Sanfaçon) is a PDF in Dept. Medicine, U. Alberta.

**Hugo Zhang** (PDF Kunst) is an Assistant Professor at McGill University.

## 50 YEARS AGO - GLEANINGS FROM UBC ARCHIVES

Dr. Donald Buckland, Associate Professor in Biology and Botany and in Forestry, died in 1956 at the age of 39. The *Donald Buckland Memorial Scholarship in Forest Pathology* was first awarded in 1957.

The first mention of the Bachelor of Science degree in the Faculty of Arts and Sciences is in the 1957-1958 University Calendar, although students could enroll in 1956. Beverley Green enrolled in 1956 and hence was a member of the first BSc class to graduate from UBC. She graduated in 1960 with Honours in Chemistry.

The 1957 Convocation Lists included:

Ph.D. (1957) Robert Gordon McMinn. Thesis "Water relations in the Douglas-fir region of Vancouver Island"

Thomas Benjamin Widdowson Awarded a *NRC bursary* (\$800)

Gertrude Pentland Awarded *NRC Studentship* (\$1200)

Dieter Mueller Dumbois. Awarded a *Leon J. Koerner Graduate Scholarship* (\$250)

BA (1957) Douglas Malcolm Shrimpton with Honours in Botany. Awarded the *Armstead Prize in Biology and Botany* and a *NRC bursary* (\$800).

BScF (1957) Marcus Bell. Dr. Bell is now a Professor emeritus of Biology at the University of Victoria

Charles Lindley Kemp. Awarded the *Edith Ashton Prize*

**To receive an email version of future newsletters or to send us any news, personal or professional, as well as news of other alumna and friends of the department with whom you are in touch, please contact us at: [botalumn@interchange.ubc.ca](mailto:botalumn@interchange.ubc.ca) In particular, we need addresses and e-mail contacts so that we can remake connections that have been lost over the years.**