

# Canadian IAPB newsletter



Volume 1, Issue 6

June 2009

## Dear IAPB members:

It is now officially summer! Hopefully we are done with the frost for a few months. I hope you are going to be enjoying the summer weather and will take some time for rest and relaxation.

As for IAPB news...

We now have 82 members in IAPB – Canadian section. Over the past year, we did lose a few but we also gained a few members. Welcome to all new members. It is your association, let me know what you think. Our dues were paid to the International Association on time.

We are planning to have a workshop in the fall. Watch your emails for announcements. The International congress will take place next June (see page 3 and 6). Please take note of the date and plan on attending. We are planning to make available scholarships for students so they can attend the congress

## Membership benefits

Just a reminder:

You will receive the “In vitro Development and Cellular Biology—Plant” journal.

You will be part of a network of Canadian researchers from across Canada.

You will be part of a large network of Inter-

and present their research. Watch your emails for further details.

This month we are highlighting the IAPB members from Quebec (see pages 4 and 5).

Some of our members attended the SIVB conference earlier this month and had a great time during and after the conference sessions (see page 2) A prestigious award was presented to one of our members (see page 3).

This is the season for conferences, so if you are attending any interesting sessions, write a few words telling us about it and send it along. The next newsletter will be in the Fall.

**Alison Ferrie**



national researchers from 85+ countries.

You will have access to the Canadian IAPB website and the International IAPB website.

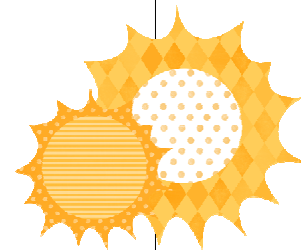
You will receive the Canadian IAPB newsletter. This is YOUR newsletter, what do you want to see? let me know.

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### FEATURES:

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# SIVB Conference update

The 2009 meeting of the SIVB was held June 6-10 in Charleston, SC. The temperature outside was broiling and the meeting rooms were freezing, but the mean temperature was quite comfortable.

Plenary sessions were held on the topics of gene targeting, all of the appropriate '-omics', the regulatory environment, and the efficient production of cellulosic ethanol. It was exciting to hear about the large multidisciplinary projects planned in the USA, as in the Keynote address on the DOE BioEnergy Science Centre; on the other hand, it is hard to think we can complete with \$135 million projects. Check out the special issue on biofuels in 'In Vitro Cellular and Developmental Biology –Plant,' June 2009.

For the first time, there were separate sessions for graduate students and postdoctoral fellows to present their work and compete for a prize. While it is unfortunate that the two sessions were concurrent, the audiences were sufficient to give support to both groups.

There was a very small contingent of Canadian representatives at the meeting. All were proud to see Dan Brown (AAFC, London) receive a 2009 Fellow Award. The award was presented by Mark Jordan (AAFC, Winnipeg), who also summarized Dan's many contributions to science, tissue culture and the SIVB.

Next year's meeting will be held in conjunction with the 12<sup>th</sup> IAPB World Congress in St. Louis Missouri (June 6-11.). Check the appropriate websites often as the deadlines for abstracts will be early.

Submitted by: Dr. Patricia Polowick

## Dr. Dan Brown

Dr. Dan Brown obtained his Ph.D. in 1980 from the Department of Plant Sciences, University of Calgary. He joined Agriculture and Agri-Food Canada in 1981 as a Research Scientist and is currently at AAFC in London, Ontario. Dan is also Adjunct Professor at several universities and has taught courses in the area of *in vitro* biology.

Dan has been a member of the International Association of Plant Tissue Culture and Biotechnology (now IAPB) since 1977 and a member of In Vitro Biology since 1980. Dan was the Canadian National Correspondent for our

association from 1994 – 1998. He has also been the Associate Editor of the IAPB- In Vitro Cellular and Developmental Biology-Plant Journal and Managing Editor and Editor-in-Chief of Plant Cell, Organ and Tissue Culture. Dan has been the editor of a book on biotechnology and improvement of forage legumes. He has numerous book chapters, many, many publications, and given many invited lectures, oral presentations and posters.

As for research, Dan developed an efficient alfalfa somatic embryogenesis system which advanced knowledge in

## IAPB history snippet

Locations of IAPB Canadian section conferences

1984:Saskatoon  
1988:Ottawa  
1992:Guelph  
1996:Saskatoon  
2001:Saskatoon  
2004: Truro  
2008:Saskatoon  
2012: ?????

National Correspondents for Canadian section of IAPB

1982—1986: Kutty Kartha  
1986—1990: Wilf Keller  
1990—1994: Ken Kasha  
1994—1998: Dan Brown  
1998—2002: Ravi Chibbar  
2002—2006: Kris Pruski  
2006—2010: Alison Ferrie  
2010—2014: Could be you



the genetic control of embryogenesis in this species. Dan played a key role in development of plant artificial seed technology and was one of the key researchers who discovered and characterized plant constitutive cryptic gene regulatory elements (tCUP promoter system). Dan was also involved in developing a new technology for repression of gene expression via plant histone deacetylases (HDACs).

Thanks to Mark Jordan for the information

## Awards

Dr. Dan Brown has been awarded Plant Fellow by the Society for In Vitro Biology (SIVB). SIVB originally focused on tissue culture research (*in vitro* biology research) but for the past years, the Society has developed to cover various aspects of plant research. The Plant Fellow is awarded to researchers who have made significant contributions to plant research, especially in the area of plant *in vitro* biology and contributed significantly to the Society for In Vitro Biology. Last year, Dr. Michael E. Horn, Editors-in-Chief, Plant Cell Reports, a well recognized and widely distributed international journal, was awarded the Plant Fellow by the society

The award was presented to Dr. Dan Brown at the 2009 In Vitro Biology Meeting in Charleston, South Carolina in June.

Submitted by: Lining Tian

Photo by: Patricia Polowick

### Congratulations Dan



## News from International

### Website and Forum

If you have been to the International website you can network with other IAPB members from around the world interested in the same areas you are.

All you need to do is enter some keywords describing your interests. This will help build a database among our IAPB colleagues. You can also participate in the open forum which allows you to pose a question to those who participate. The forum is simple to use and will facilitate timely communication among IAPB members. You must first register before you will be allowed access to the keywords database and open forum.

### Meet me in St. Louis!

June 6—11, 2010

#### SAVE the DATE

12th World Congress of the IAPB will take place in St. Louis, Missouri. The theme of the meeting is sustainability through agricultural biotechnology: food, biomaterials, energy, and environment.

Keep checking the website for more information <http://www.IAPB2010.org>

### How to access In vitro journal on-line

- To register for your online access to **In Vitro Plant**, please follow these directions:
- Go to: <http://www.springer.com/iapb>
- Click on: "LOG IN HERE"
- If you have already done so in the past, log in with your username or e-mail address and password.

- If you do not have an account on Springer.com, click on the blue "Set up a new account" button below the text: "Are you new to springer.com?"
- In the next window enter your **S p r i n g e r T o k e n : S Q p p e B x e m n c S w M h** This token confirms that you are a member of **IAPB**. On subsequent visits you will not need the token; your username / password will prove your membership.
- Once you have logged in you will be on the protected site. From here one click will take you straight through to the journal.
- You can access the site from any computer; just use the same login and password.
- This code is valid through March 31, 2010. At the end of the year, all members who have renewed membership for **2010** will be provided with a new code.



# Spotlight on IAPB members: Quebec

The IAPB association has six members from Quebec including:

Nicole Brassard, St-Jean-Sur-Richelieu

Caroline Constable, Lourdes-de-Joliette

Danielle Donnelly, Plant Science Dept. McGill University, Montreal

Raphael David, Montreal

Nathalie Dubois Calero, Bioevolution, Montreal

Krystyna Klimaszewska, NRC Canada, Canadian Forest Service, Laurentian Forestry Centre, Quebec city



## Krystyna Klimaszewska, Ph.D., Canadian Forest Service

Laurentian Forestry Center (LFC) is one of five research centers of the Canadian Forest Service, a sector of Natural Resources Canada. LFC is located in Quebec, the capital city of Quebec Province. The Forest Tree Biotechnology program, amongst other projects, includes the development and application of conifer tissue and cell culture techniques for tree clonal propagation, cryopreservation of valuable germplasm, species conservation, genetic transformation and functional genomics. Since the 1980's, conifer tissue culture has been revolutionized by the discovery of somatic embryogenesis (SE), which has become an enabling biotechnology in research on forest improvement through the exploitation of existing genotypes and the production of new, commercially valuable, genotypes. If considered in conjunction with breeding, traditional cloning and other common tree improvement techniques, these new biotechnologies may significantly influence worldwide management decisions in forestry.

Over the last 20 years, I have been working with multiple conifer species. Mature embryos (spruce species) and, most frequently, immature embryos (spruces, pines, larches, Douglas fir, western red cedar, yellow cedar), are used for the initiation of SE. SE, in conifers, differs from herbaceous plants by having distinct stages that are arrested by culture conditions and can be easily manipulated. Its potential, in clonal propagation of genetically improved seed families, was quickly realized by forest companies and resulted

in my secondment to BC Research Inc. (Vancouver, BC) (1996-1998) to develop efficient maturation protocols for the somatic embryos of different conifer species (Klimaszewska et al. *Maturation of somatic embryos*. US Patent 6,200,809 B1. March 13, 2001).

In the last few years, my research has focused on the induction of SE from tissues of juvenile and mature white spruce. The latter is still the "holy grail" of conifer tissue culture and has been an unprecedented challenge. Phase change, or maturation, in woody plants not only results in changes in growth behaviour, but results in increased difficulty in vegetative propagation of select individuals. We have achieved SE, and the production of truly juvenile propagules, from 8-yr old white spruce in a few genotypes. The expression of marker genes, of early embryogenesis, is followed during the culture to detect an early onset of the process. It is anticipated that these genes could eventually be used to discriminate between callus and embryonal masses, both of which have similar morphologies, and therefore eliminate the time and cost of keeping the non-productive callus in culture.

Based upon identification of the *Arabidopsis* SE genes, I am involved in a project of assessing the function of a few conifer homologues with the primary objective to determine their ability to induce SE in the vegetative tissues of spruce.

[kklimaszewska@cfl.forestry.ca](mailto:kklimaszewska@cfl.forestry.ca)

Klimaszewska K. et al. 2009. Hormonally regulated over expression of *Arabidopsis* *WUS* and conifer *LEC1* (*CHAP3A*) in transgenic white spruce: implication for somatic embryo development and somatic seedling growth. Abstract IUFRO Tree Biotechnology 2009, Whistler, BC, June 28-July 2, 2009.

Klimaszewska K., Trontin J.F., Becwar M., Devillard C., Park Y.S., Lelu-Walter M.A. 2007. Recent progress in somatic embryogenesis of four *Pinus* spp. *Tree and Forestry Science and Biotechnology* 1 (1): 11-25

Charity J. A., Klimaszewska K. 2005. Persistence of *Agrobacterium tumefaciens* in transformed conifers. *Environmental Biosafety Res.* 4: 167-177

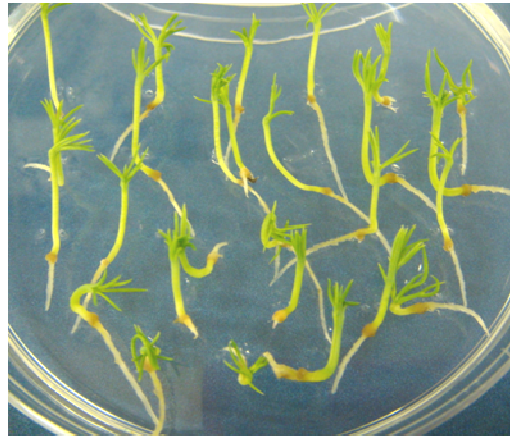
Klimaszewska K., Morency F., Jones-Overton C., Cooke J. 2004. Accumulation pattern and identification of seed storage proteins in zygotic embryos of *Pinus strobes* and in somatic embryos from different maturation treatments. *Physiol. Plant.* 121: 682-690

Klimaszewska K., Lachance D., Pelletier G., Lelu M.A., Séguin A. 2001. Regeneration of transgenic *Picea glauca*, *P. mariana*, and *P. abies* after cocultivation of embryogenic tissue with *Agrobacterium tumefaciens*. *In Vitro Cell. Dev. Biol. – Plant*: 37: 748-755.

## CFS-CFL, Quebec, QC



**White spruce, 8-yrs old, Val Cartier, QC**



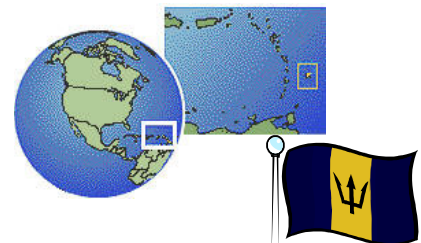
**Somatic embryos and somatic seedlings from the tree above**

## Danielle Donnelly Ph.D., McGill University

Dr Donnelly is the Program Director for the Barbados Interdisciplinary Tropical Studies (BITS) program which is located at Bellairs Research Institute. She is currently in Barbados. This is Canada's only teaching and research facility in the tropics. It is located in Holetown, Barbados, and plays host to students and scientists from around the world for field courses.

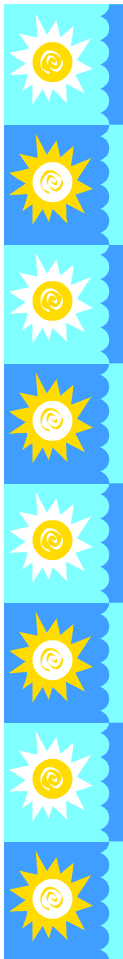
This summer program is an activity-filled, hands-on study experience for students with an interest in international studies with a Caribbean flavour. It exposes students to a wide range of agri-food-energy industries and related socio-economic issues in Barbados.

For more information, you can check the website: <http://www.mcgill.ca/bits/>



# Upcoming conferences

2009



**Plant Biology 2009**

July 18—22, 2009

Honolulu, Hawaii

[www.aspb.org/meetings/pb-2009/](http://www.aspb.org/meetings/pb-2009/)

**7th Canadian Plant Genomics Workshop**

August 24—27, 2009

Saskatoon, Canada

[Www.cpgw2009.ca](http://www.cpgw2009.ca)

**ABIC**

September 22—25, 2009

Bangkok, Thailand

<http://www.abic.ca/abic2009.html>

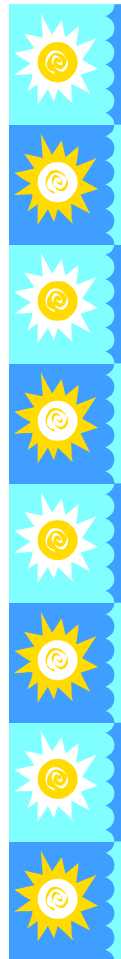
**International Plant Molecular Biology Congress**

October 25—30, 2009

St. Louis, Missouri

<http://www.ipmb2009.org/index.html>

2010



**IX International Symposium of Plant Biotechnology**

April 20—22, 2010

Santa Clara, Cuba

<http://simpsio.ibp.co.cu>

**IAPB—International Conference**

June 6—11, 2010

St. Louis, USA.

**Int. Congress on Sexual Plant Reproduction**

August 2—6, 2010

Bristol, UK

**28th Int. Hort. Congress**

August 22—27, 2010

Lisbon, Portugal

[www.ihc2010.org](http://www.ihc2010.org)

**17th Crucifer Genetics Workshop**

September 5—8, 2010

Saskatoon, SK



## Acknowledgements:

Thank you to Lining Tian, Krystyna Klimaszewska, and Patricia Polowick for their contributions to this issue.

Thank you to my advisory committee: Karen Caswell, Terry Bethune and Patricia Polowick for their advice, input and suggestions throughout the year