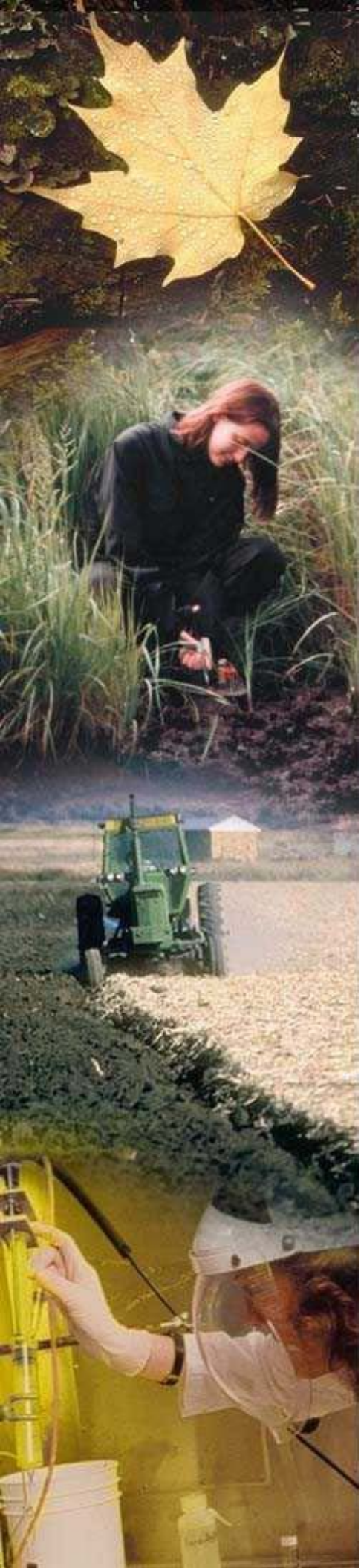

# CSA Newsletter

**Canadian Society of Agronomy** **June 2008**

## President's Message

Food prices are rising globally, and headlines suggest a world food crisis. Suddenly cropping system productivity has become an important issue again. Where are the agronomists? A number of voices are highlighting the need for accelerated efforts in agronomic research.

In the 26 April Globe and Mail, Jim Cornelius, executive director of the Winnipeg-based Canadian Foodgrains Bank, was quoted as stating that owing to higher prices, "there's probably a 40-per-cent decline in the amount of food we can provide." Jeffery Sachs, special adviser to the UN Secretary-General, was quoted as criticizing Canada for "abandoning its leadership role in international development." He emphasized that countries like Canada should be focusing on sustainable development and support for agriculture and research.

The New Scientist magazine carried an article in April titled "World Food Price Crisis Blamed on Government Neglect." It highlighted the message from heads of several international farm research institutes: "Fund another Green Revolution - or people will starve." I believe most CSA members would support their statement that "…the worldwide surge in food prices is a predictable result of the neglect of agricultural research over the past two decades."

Media attention swelled this year at the International Fertilizer Industry Association (IFA) annual conference held in Vienna last month, owing to the food crisis and the recognition of the role of fertilizer. Dr. Paul Fixen, Senior VP of the International Plant Nutrition Institute, writes: "The world has finally realized... that crop productivity must increase more rapidly than it has in the past. Today it is called the world food crisis and we see it now in the headlines on a daily basis."

These stories highlight an urgent global need for improved crop productivity. Agronomy offers that and more. Productivity improvements don't benefit society if they are made at the expense of farmer profitability, the health of the environment or the conservation of non-renewable resources. Agronomy is an integrating applied science that seeks balance among these essential objectives.

These stories outline the potential for the future of our Society. This is the time to activate. There is a lot more we could be doing to advance agronomy.

- Participating in our upcoming meeting in Montreal 13-16 July is one. See the highlights below. The opening plenary features professors Cassman, DeWitt, Smith and Powers addressing biofuels, bioproducts and ecological intensification. No doubt the "food versus fuel" issue will feature heavily. Continue the discussion in the evening in an informal session facilitated by CSA President-elect Shabtai Bittman.

- It's not too early to start thinking about next year's meeting in Guelph either. Mark your calendars for 2-6 August 2009. Partnering with scientists in soils and agrometeorology, we have potential for extraordinary sessions inte-

grating soil biophysical behaviour, plant genetics and weather for management of Canadian cropping systems. The University of Guelph's Plant Agriculture scientists Rene Van Acker, Bill Deen and Istvan Rajcan are representing CSA on the planning committee.

The issues are driving a need for more agronomists. We need to prepare to recruit more students to the profession, and more of the profession into our Society. Let's discuss how we can grow—not just maintain—the profession of Agronomy in Canada.
The members of your Society's executive are listed on the back page of this newsletter. They welcome your input and your opinions and new ideas on what your Society could be doing to further your career in agronomy.

I hope to see you in Montreal.

*Tom Bruulsema*
*President*

## From Head Office

**Thriva**: This year, CSA was obliged to change our on-line renewals service provider, because our former provider, SPORG, was bought out by Thriva. We decided to stay with this group rather than start over entirely new. However, Thriva systems are entirely different than SPORG – better – but different none the less. Things were unsettled for a while. We also had to completely change the electronic records kept in our office to accommodate the new Thriva systems. Everything seems to be working well now. Our elections using electronic ballets will check one final dimension to the Thriva services.

**Web site and blog**: There is some debate about what the CSA web site should do. On one hand, it is a relatively passive archive for things like the By-Laws and the newsletters. It is also the prime source to locate information about our annual meetings. Obviously, it could be a lot more dynamic, but the more dynamic it is the faster it is out of date.

One idea to was to develop some blog possibilities. If a major role of CSA is to mentor and encourage new agronomists, then a blog might be useful. The 'old' agronomists could post bits of wisdom and the 'new' agronomists to tell us why those bits aren't too useful! Any thoughts on such communications? Tell us (Tom, tom.bruulsema@ipni.net or Steve, sheppards@ecomatters.com). There is a link at http://www.montreal08.org/Program.htm , where we have an "Opinions on the Theme" space related to this year's conference, not quite a blog, but closer.

**Newsletters**: At the last AGM, the members present were asked to vote informally on the favored method of delivery of the newsletter. Most wanted only pdf files by email. One person wanted paper-copy only. Eight wanted both. At present, the newsletters are mailed as paper copy and also posted (later) on the web site. The reason we have stayed with paper-copy is because we think it has better 'marketing' impact: we think it is more likely to be read than an electronic version, more likely to provide a visual 'branding' for CSA because of the distinctive cover, and more likely to be passed around to students or whomever. This is speculation of course, not scientifically proven! The next level of delivery is probably one newsletter per year as paper-copy (probably just before the conference or during renewal time), and the remainder electronic only. Your comments welcome.

*Steve S.*
*Executive Director, Canadian Society of Agronomy*

# Biographies of Candidates for Eastern Director, CSA Executive

## Derek Lynch

Derek Lynch PhD., M.Sc. PAg., is Assistant Professor and Canada Research Chair in Organic Agriculture at the Nova Scotia Agricultural College, in Truro, Nova Scotia. He is a professional agrologist with over 20 years experience in cropping systems and agricultural resource management, and has been a member of the Canadian Society of Agronomy for the past fifteen years. He is currently chair of the Expert Committee on organic agriculture. Derek completed his BSc in Agronomy, followed by an MSc on soybean physiology, at McGill University. From 1993 to 1998, Derek co-managed a consulting partnership providing research and advisory services to the agricultural sector in Atlantic Canada in soil fertility, waste management and the design of resource-efficient cropping systems. His PhD through (Univ. of Guelph), focused on soil fertility and organic matter dynamics under perennial forages. Derek's teaching and research experience and interests include; Organic crop production, nutrient cycling and soil organic matter management in agro-ecosystems, soil microbiology, and productivity of grassland/forage systems. Derek is currently an Eastern Director for the Canadian Society of Agronomy.

## Balakrishnan Prithiviraj

Balakrishnan Prithiviraj is an Assistant Professor and Industrial Research Chair at the Department of Plant and Animal Sciences, Nova Scotia Agricultural College. After graduating with a Ph.D from Banaras Hindu University, India he conducted post doctoral research at the Department of Plant Science, McGill University and the Department of Horticulture and Landscape Architecture, Colorado State University. Later he continued as an Assistant Professor at Colorado State University before coming to Nova Scotia. At the Nova Scotia Agricultural College Dr. Prithiviraj has two major areas of research: 1) development of marine bio-products for imparting biotic and abiotic stress tolerance in plants 2) Investigation of the factors affecting the specificity of root-microbe interaction with a long term goal of improving plant health by encouraging preferential colonization of roots by beneficial microbes. Dr. Prithiviraj has attracted about $1.4 million in funding from federal and provincial government agencies, inter-university collaborations and industry. He reviews manuscripts for a number of scientific journals and grant proposals for funding agencies in Canada and the United States. Dr. Prithiviraj has 70 peer reviewed publications and two patents to his credit. He actively participated in organizing the Halifax 2006 CSA, CSAS and CSHS conference, more specifically he served on the CSA program planning committee and coordinated the assembly, editing and printing of the proceedings of this conference.

# Annual Conference Highlights

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| Sunday 13 July | 5-7 pm | Mixer/reception, wine & cheese |
| Monday 14 July | morning | Plenary Symposium on Ecological Intensification, Biofuels and Bioproducts |
| | afternoon | Society AGM, presentations and posters |
| | evening | Informal discussion session with pizza and refreshments |
| Tuesday 15 July | morning | Scientific presentations and posters |
| | afternoon | Field Trips – Montreal Botanical Garden, AAFC St-Jean, McGill University MacDonald Campus |
| | evening | Reception and Awards banquet – feature speaker: |
| Wednesday 16 July | morning | Scientific presentations |

**Local Organizing Committee**

Philippe Seguin
Magali Merkx-Jacques
Joann Whalen
Katrine Stewart
Mark Lefsrud
Donald L. Smith

**Other Canadian Society of Agronomy members on conference committees:**

Gilles Bélanger – scientific program
Rigas Karamanos – fundraising
Cynthia Grant – awards
Gavin Humphries – finance
Tom Bruulsema - chair

For more information and registration, see www.montreal08.org

www.montreal08.org

# News from the East

## Tours for the 2008 Joint Meeting of the CSA, CSHS, and Northeastern Branch of ASA-CSSA-SSSA.

It is with great pleasure that McGill University will be hosting on its downtown Campus the 2008 joint meeting of the Canadian Society of Agronomy, Canadian Society for Horticultural Science, and the Northeastern Branch of the ASA-CSSA-SSSA. As part of the activities for this meeting, the organizers have planned three exciting tours. Each participant can select one of these tours, which will take place in the afternoon of July 15.

The first one will be at the AAFC station in St. Jean-sur-Richelieu, where participants will have the opportunity to visit one of AAFC's 20 research center. This center conducts research in the areas of crop breeding, sustainable production, pest management and preserving the quality of crops after harvesting, with an emphasis on horticultural and ornamental crops. This tour will provide an overview of the research center and of the research plots located at the nearby L'Acadie research farm.

The second tour will be at the Macdonald Campus of McGill University, which is home to its Faculty of Agricultural and Environmental Sciences. This tour will take a look at McGill facilities on campus including the Morgan Arboreteum (Canada's largest) and the Emile A. Lods Agronomy Research Centre, where participants will take a look at research plots. Participants in this tour will have a chance to relax in this gorgeous setting while enjoying an outdoor lunch (weather permitting) and a poster presentation session of current research projects taking place on campus.

Finally, the third tour will be at the Montreal Botanical Garden. With an outstanding collection of plant species, 10 exhibition greenhouses, and some 30 thematic gardens, the Montreal Botanical Garden ranks as one of the world's largest (180 acres) and most spectacular botanical gardens. The Chinese and Japanese Gardens offer exotic landscapes, whereas the Tree House displays Québec's forest wealth. The First Nations Garden, presents the unique relationship that local Amerindian nations have always maintained with plants. A limited number of participants can also register to visit research areas of the botanical gardens and witness research being carried out.

For more information please look at the official website of the meeting (www.montreal08.org). We are looking forward to meet you in Montreal!

*Philippe Seguin*
*Local Organizing Committee*

# Speaker Biographies for Montreal '08 : Plants and Soils

***Opening Plenary, Morning Session, 14 July 2008***

**Ecological Intensification, Biofuels and Bioproducts**

**Food Security and Conservation of Natural Resources in a Biofuel World**

Prof. Kenneth G. Cassman, University of Nebraska

Agriculture is undergoing a biofuel revolution due to a massive global expansion of biofuel production from food crops that no one predicted three years ago. Avoiding food shortages and an excessive rise in consumer food prices, protection of soil and water quality, and ensuring that biofuel systems deliver the expected environmental and political benefits of GHG mitigation and replacement of petroleum-based transport fuels are critical to sustaining this new era without provoking negative public sentiment and a rescission of favorable government policies that could abort this revolution before it takes off. What is required to sustain the biofuel revolution?

Prof. Cassman is Heuermann Professor of Agronomy and former Head of the Department of Agronomy and Horticulture at the University of Nebraska in Lincoln. He also serves as Director of the Nebraska Center for Energy Sciences Research. Previously, at the International Rice Research Institute in Los Baños, Laguna, Philippines he served as Head of the Division of Agronomy, Plant Physiology, and Agroecology.

**Plants and Soils in Biospheric Context: Bioenergetic Challenges to Planet Stewardship**

Prof. Calvin B. DeWitt, University of Wisconsin

As green plants and soils are fundamental for agriculture, so also for the biosphere. Processing solar income and producing molecular carbon skeletons for all life agricultural and biospheric, plants hold, process, and produce soil, carbon, and oxygen. Cultured, they serve human life via gardens, fields, and markets. Biospherically they sustain the only known life of the universe. Plant and soil scientists, together with farmers, gardeners, and every person on earth are in a continual, sustained, and interactive relationship with plants and soils—a mutual interaction between land and people that is a kind of negotiation between "garden" and "gardener"—a "con-service" between people and biosphere in which biospheric service to human and other life is returned reciprocally with service of our own. Con-service, however is being increasingly stressed. The global human economy extracts and releases to the atmosphere energy-rich carbon savings sequestered ages earlier by biotic predecessors even as this economy is extending itself to extraction of energy-rich carbon for fuels from plants and soils. A major consequence of this economy is a warming of the planet from transformation of "fossil fuels" that returns sequestered carbon to the atmosphere, including recent additions from thawing Quaternary plants and soils formerly frozen in permafrost. The expanding human economy necessarily broadens the scope of our stewardship to include solar income, solar savings, geofuels, biofuels, food production, and sustaining the living fabric of the biosphere. Among the challenges for the practical scientist and other "earth gardeners" is meeting both human and biospheric needs. Three questions are basic to meeting this challenge: (1) How does the biosphere work (including plant and soil science), (2) What ought to be (including land and biospheric ethics), and (3) Then what must we do? (including plants and soils praxis). Practical plants and soils scientists now find themselves in global bioethical context.

Calvin B. "Cal" DeWitt is professor of environmental studies with the Nelson Institute at the University of Wisconsin-Madison where he serves as a member of the graduate faculties of Land Resources, Water Resources Management, Conservation Biology and Sustainable Development, and Limnology and Marine Science. His assignment since 1972 has been "to address the fragmentation of the disciplines" through development of an integrative program of teaching, research, and service directed at ecological integrity and sustainability.

**Biofuels: Sustainable Energy as the Oil Runs Out**

Prof. Donald L. Smith, McGill University

Two of the great challenges for humanity in the 21st century are energy resources and climate change. These are linked through biofuels. Biofuels can range from simple firewood to replacements for gasoline and diesel fuel; the latter can be manufactured in a number of ways. Energy balance is a major concern in biofuel production; both the way the biofuel crops are produced and utilized affects this. Large scale production of biofuels will lead to social issues such as deciding between production of food and fuel. This talk will provide a broad overview of the potential for biofuels and associated issues.

Prof. Smith is James McGill Professor and Chair of the Plant Science Department at McGill University in Montreal, QC. He currently leads the Green Crop Network on crops and climate change, including work on biofuels, and also heads the McGill Network for Innovation in Biofuels and Bioproducts (McNIBB). His research program has focused on production and physiology of crop plants, plant-microbe interactions, nitrogen fixation and responses to changes in the atmosphere and the climate.

**The Ethics of Biofuels: Starving Peter to Drive Paul?**

Prof. Thomas M. Powers, University of Delaware

Programs to produce biofuels are facing increasing scrutiny from natural scientists, agronomists, economists, and now even ethicists. The initial goals of many such programs seemed unobjectionable: to reduce greenhouse gases while providing for energy security, especially in the transportation sector. Now it appears that those goals are in doubt. Some types of biofuels production, on the whole, may increase greenhouse gases, and the expected benefits to many nations in terms of energy security may be swamped by economic and geopolitical insecurity due to rising food prices. Recent increases in many food prices have been tied to biofuels production, and whether or not the causal connection can be made out, the insecurity is not in doubt.

There may be partial technological solutions to both of these setbacks. If scientists and engineers hit upon (or genetically engineer) optimal biofuels feedstocks and conversion processes for a variety of regions and uses, the expected overall marginal decrease in greenhouse gases may yet obtain. In the same way, new technology may turn away from feedstocks that also feed human beings, and thus alleviate demand pressures on basic staple markets. New technology almost always brings new hope. In general, though, we lack a framework for addressing problems like this one where existing markets and technologies create temporary (and massive) zero-sum games. In the competitive game at hand, eaters lose out to drivers. I will argue that scientists and engineers have obligations to eaters as well as drivers (and hence have obligations to avoid contributing to the creation of such zero-sum games), and will suggest an ethical framework for addressing such social choice problems.

Dr. Powers is an assistant professor of philosophy at the University of Delaware and a faculty research fellow at Delaware Biotechnology Institute. His research concerns ethics and technology, with a focus on information ethics, values and design, genetic enhancement, and nanotechnology. Dr. Powers received his undergraduate degree from the College of William & Mary and his doctorate in philosophy from the University of Texas at Austin (1994) which included research at the Ludwig-Maximilians-Universität in Munich, Germany as a DAAD-Fulbright graduate fellow.

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