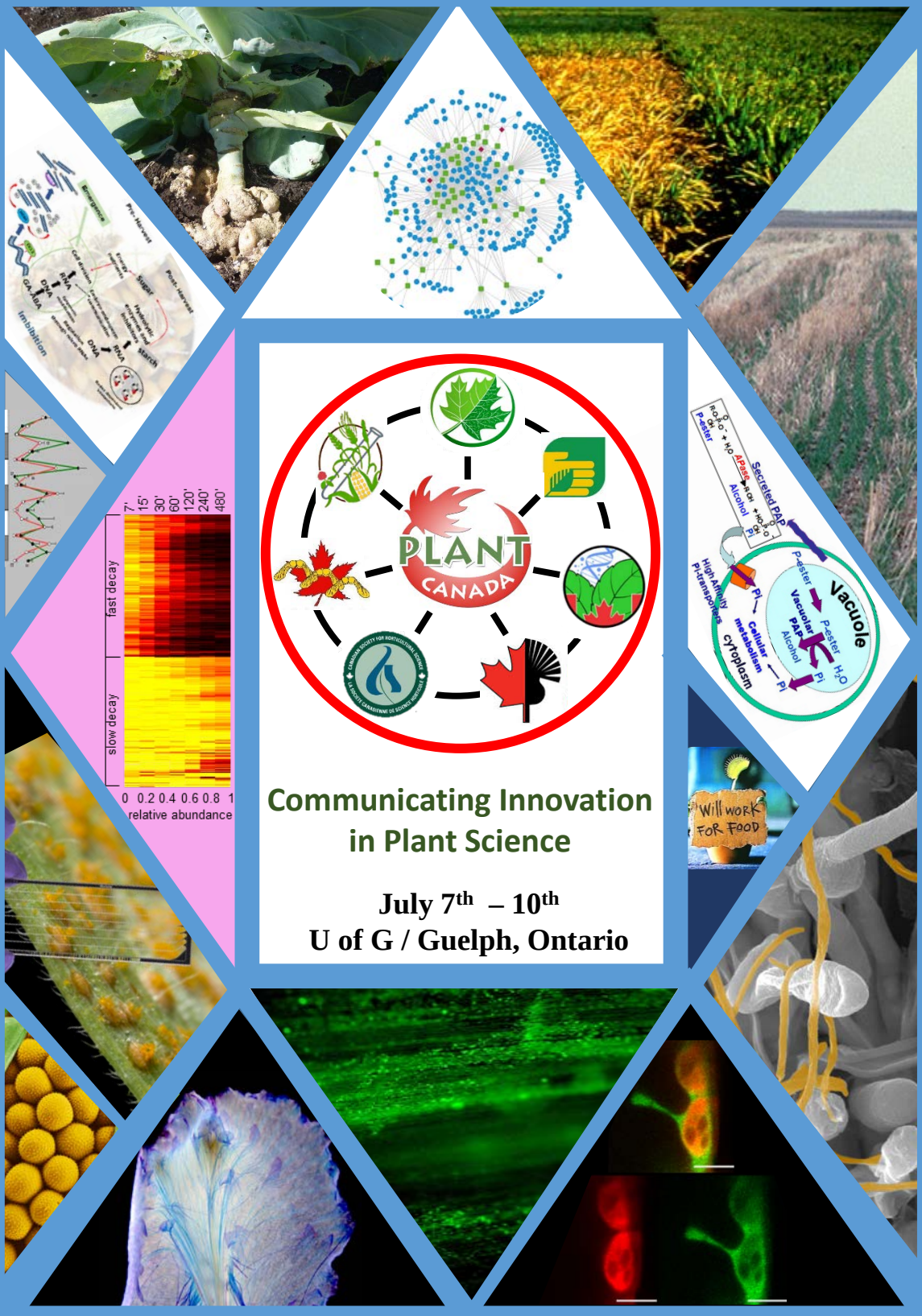
PLANT CANADA 2019



Communicating Innovation in Plant Science

July 7th – 10th

U of G / Guelph, Ontario

PROCEEDINGS

On the front cover:

1. An example of a gene regulatory network (figure courtesy of Siobhan Brady and Allison Gaudinier, University of California-Davis, USA).

2. A comparison between control and genome-edited rice in the field shows that genome editing of pathogen-responsive elements in rice SWEET (sugar transporter) genes leads to broad-spectrum resistance to bacterial blight (image courtesy of Bing Yang, University of Missouri, USA).

3. No-till winter wheat seeded into standing stubble for snow trapping, spring, north-central Saskatchewan (image courtesy of Brian Fowler, University of Saskatchewan, Canada).

4. Model showing that vacuolar and secreted purple acid phosphatases (PAPs) are upregulated by Pi-deprived plants to scavenge Pi from intra- & extracellular Pi-esters (figure courtesy of William Plaxton, Queen's University, Kingston, Ontario, Canada).

5. Hyphal network of *Pseudozyma flocculosa* developing around powdery mildew colonies (image courtesy of Richard Bélanger, Université Laval, Québec, Canada).

6. A stromule emerging from a chloroplast labeled with GFP fused to carbonic anhydrase (image courtesy of Maureen Hanson, Cornell University, New York, USA).

7. Far red light increases $^1O_2$ levels in corn; singlet oxygen was detected using SOSG reagent and fluorescence microscopy (image courtesy of Clarence Swanton, University of Guelph, Ontario, Canada).

8. Rhizoids on the underside of a cleared specimen of the liverwort, *Marchantia polymorpha* (image courtesy of Victor Jones, University of Oxford, UK).

9. (a) Yellow rust spores on a wheat leaf and a sequencing slide used to introduce a sample to a high-throughput genetic sequencer (image courtesy of Andy Davis, John Innes Centre, UK). (b) Yellow rust spores from inside a wheat leaf (SEM image courtesy of Kim Findlay, John Innes Centre, UK).

10. An RNA decay rate heat map (data courtesy of Leslie Sieburth, University of Utah, USA).

11. A model for the regulation of pre- and post-harvest grain germination in cereals (figure courtesy of Jaswinder Singh, McGill University, Montreal, Québec, Canada).

12. Clubroot on cabbage caused by *Plasmodiophora brassicae* Wor. (image courtesy of Mary Ruth McDonald, University of Guelph, Ontario, Canada).

*****The nitrate uptake rate over a 3-day period in tomato shows a circasemidian pattern in a 12 or 24 h photoperiod (data courtesy of Barry Micallef, University of Guelph, Ontario, Canada).

Welcome to the Meeting / Bienvenue au la Congrès 2019

Federation of Canadian Plant Science Societies

Fédération des Sociétés Canadiennes des Sciences Végétales

The University of Guelph
Guelph, Ontario, Canada

July 7th – July 10th, 2019

THANK YOU to the **UNIVERSITY of GUELPH** for hosting Plant Canada 2019

UNIVERSITY of GUELPH

OFFICE of RESEARCH

The University of Guelph Office of Research oversees a $146 million research enterprise across seven colleges, our regional campus at Ridgetown, 15 research stations and the University of Guelph/Ontario Ministry of Agriculture, Food and Rural Affairs partnership. We are committed to supporting the research programs of University of Guelph faculty across all disciplines.

From the three founding Colleges: the Ontario Veterinary College (1862), the Ontario Agricultural College (1874) and the MacDonald Institute (1903), the University of Guelph, established in 1964, has grown to be one of Canada's top comprehensive universities. Dedicated faculty and staff are at work making communities, environment, food and health better.

https://www.uoguelph.ca/research/

The Ontario Agricultural College (OAC) of the University of Guelph is internationally renowned for its research, teaching and knowledge extension. Our community has a strong sense of shared purpose: To Improve Life by inspiring leaders, generating knowledge and creating innovative solutions for food, agriculture, communities and the environment.
https://www.uoguelph.ca/oac

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Canada's largest and most diverse applied plant biology department. We are a research-intensive department within the Ontario Agricultural College dedicated to teaching, research and service related to horticultural crops, turfgrass, landscape species and field crops. We provide hands-on learning opportunities from nationally and internationally recognized experts to students at the diploma, undergraduate and graduate levels.
https://www.plant.uoguelph.ca/

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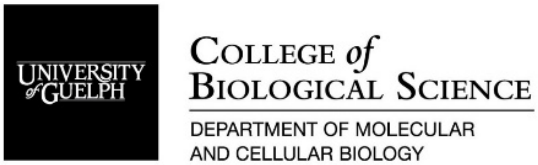

https://www.uoguelph.ca/cbs/ https://www.uoguelph.ca/mcb/

The College of Biological Science is a globally-recognized academic faculty with a mission to expand the understanding of life, from DNA to cells to complex ecosystems. It produces intrepid and interdisciplinary research in a student-centred learning environment that encourages and promotes comprehensive understanding of the systems that govern life.

THANK YOU to our **INDUSTRY SPONSORS** for making Plant Canada 2019 possible

GOLD Supporter ($6000)

InnoTech Alberta

SILVER Supporter ($3000-$5999)

- BASF
- BioChambers
- Canadian Science Publishing
- Conviron
- Hoskin Scientific
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Bronze Supporter ($1000-$2999)

- Ag West Bio
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- Performance Plants
- Syngenta
- Vineland Research and Innovation Center

InnoTech Alberta https://innotechalberta.ca/

InnoTech Alberta offers you access to research talent, technical expertise, and unique facilities that can help accelerate technology development that serves both the private and public sector.

Sponsor of Tuesday Afternoon Session 4:

Cannabis Production and Disease Management

Presented in Rozanski Hall r. 103

Please Visit Innotech at Booth #1

BASF https://www.basf.com/ca/fr.html

Sponsor of the Wednesday morning Coffee Break

Please Visit BASF at Booth # 2

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BioChambers Inc https://www.biochambers.com/

Sponsor of the Tuesday afternoon Coffee Break

Please Visit Biochambers at Booth # 3

Canadian Science Publishing https://www.nrcresearchpress.com/

Canadian Science Publishing

Sponsor of the Monday morning Coffee Break

Please Visit CSP at Booth # 4

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Conviron http://www.conviron.com/ Please Visit Conviron at Booth # 7

Sponsor of the Monday afternoon Coffee Break

Hoskin Scientific https://www.hoskin.ca/

Sponsor of

Poster Session #2

Please Visit Hoskin Scientific at Booth # 5

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LI-COR Biosciences https://www.licor.com/

Sponsor of Poster Session #1

Please Visit LI-COR at Booth # 6

Western Grains Research Foundation https://westerngrains.com/

Sponsor of the Tuesday morning Coffee Break

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Regent Instruments http://regent.qc.ca/

Sponsor of the Wednesday afternoon Coffee Break

Ag West Bio https://www.agwest.sk.ca/

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Cargill https://www.cargill.ca/en/home

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Cedarland https://www.cedarlanelabs.com/

Please Visit CedarLane at Booth # 8

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Corteva Agri Sciences https://www.corteva.com/

Crop Life
https://croplife.ca/fr/

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Fisher Scientific https://www.fishersci.ca/ca/fr/home.html

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Grain Farmers of Ontario https://gfo.ca/

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Koch Agronomic Services https://kochagronomicservices.com/

Medicago https://www.medicago.com/fr/

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Performance Plants http://www.performanceplants.com/

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Syngenta https://www.syngenta.ca/

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Vineland Research and Innovation Centre https://www.vinelandresearch.com/

Table of Contents

Federation of Canadian Plant Science Societies
Fédération des sociétés canadiennes des sciences végétales

Plant Canada President's Message

Greetings from Plant Canada

On behalf of the Board of Directors of Plant Canada, I am pleased to invite you to attend the **Plant Canada 2019 meeting with the theme communicating innovation in plant science**, to be held from July 7-10, 2019 in Guelph, Ontario, Canada. The conference will include a keynote speech, plenary lectures, symposia, workshops, many concurrent oral sessions and poster presentation sessions. We are expecting about 600 delegates so it will be a great meeting for networking and developing collaborations among the members of seven plant science societies of Plant Canada.

About Plant Canada

Plant Canada - Federation of Canadian Plant Science Societies, a not-for-profit corporation, is an umbrella organization that seeks to bring together researchers, educators, extension personal, postdoctoral fellows and students in plant science and related disciplines in Canada. The purposes of Plant Canada are: a. to organize and sponsor regular, effective scientific meetings and workshops under a national umbrella for plant science and related disciplines in Canada, b. to operate and maintain a strong communication network among Member Societies and their individual members, and c. to be a strong and effective force for public education and advocacy in plant and related sciences in Canada and globally. Plant Canada organizes Plant Canada conferences every four years.

Plant Canada Incorporation

Although founded in 2000, Plant Canada - Federation of Canadian Plant Science Societies (referred to as Plant Canada through the document) was incorporated as a Not-for–profit corporation on July 31, 2015 under the new Canada Not-for–profit Corporations Act.

Plant Canada Member Societies

As of July 2019, Plant Canada membership includes seven Canadian plant societies: Canadian Association for Plant Biotechnology (CAPB), Canadian Botanical Association (CBA), Canadian Phytopathological Society (CPS), Canadian Society of Agronomy (CSA), Canadian Society for Horticultural Science (CSHS), Canadian Society of Plant Biologists (CSPB) and Canadian Weed Science Society (CWSS).

2015-19 Plant Canada Highlights

- Plant Canada was incorporated as a federal corporation on July 31, 2015.
- Initiated first steps after incorporation and developed PC by-laws.
- Completely redesigned Plant Canada website
- Fostered collaboration among Canadian Plant Science societies
- Contributed to the Canadian Plant Health Network consultations
- Each year sponsored a Plant Canada student presentation award
- Organized the Plant Canada 2019 meeting with a theme of Communicating Innovation in Plant Science from July 7- 10, Guelph, ON.

Plant Canada Officers and Board of Directors 2018-19

Dr. Deena Errampalli

PC President

Dr. John Markham

PC Vice President

Dr. Diane Edwards

PC Secretary

Dr. Gayle Jesperson

PC Treasurer

Dr. Shahrokh Khanizadeh

PC Past President

The Plant Canada Board of Directors (2018-19) is made up of two representatives from each of the seven member societies (normally the president, Vice president, past president or president elect):

Dr. Rima Menassa

Canadian Association for Plant Biotechnology

Dr. Abdelali Hannoufa

Canadian Association for Plant Biotechnology

Dr. Art Davis

Canadian Botanical Association

Dr. John Markham

Canadian Botanical Association

Dr. Lone Buchwaldt

Canadian Phytopathological Society

Dr. Barry Saville

Canadian Phytopathological Society

Dr. Helen Booker Canadian Society of Agronomy

Dr. Jaswinder Singh

Canadian Society of Agronomy

Dr. Karen Tanino

Canadian Society for Horticultural Science

Dr. Valérie Gravel

Canadian Society for Horticultural Science

Dr. Geoffrey Wasteneys Canadian Society of Plant Biologists

Dr. Daphne Goring

Canadian Society of Plant Biologists

Dr. Rory Degenhardt

Canadian Weed Science Society

Dr. David Clements

Canadian Weed Science Society

Since the Botany 2015 meeting in Edmonton, Alberta, your Plant Canada board has met four times a year for the first three years. During the 2018-19, the Board met monthly to organize the Plant Canada 2019 meeting. In between, individual board and committee members have been heavily involved in meetings, as required. Although the Plant Canada member societies meet once every four years at the Plant Canada meeting, the individual societies held their society

meetings annually either alone or jointly with other Plant Canada member societies or other plant science societies.

Plant Canada's global involvement

Plant Canada is a member of the Global Plant Council, which supports plant science internationally. Plant Canada was a founding member of the Global Plant Council. In 2015, 2016, 2017 and 2019 the Plant Canada President attended the GPC annual meetings and represented Plant Canada. Deena Errampalli, President of Plant Canada was elected as the Treasurer of GPC in 2017.

Thank you PC Board members

On behalf of the Plant Canada, I wish to express my thanks to the 2018-19 and the past Board of Directors and committees for their time and energy on the Board. Their hard work has enabled us to move the objectives of the Plant Canada from 2015-2019. The contributions made by Diane Edwards (PC Secretary; 2014-2019) Shahrokh Khanizadeh (Immediate Past President; 2015-19), John Markham (PC Vice president; 2015-19), and Deena Errampalli (PC President; 2015-2019) who will be completing their term are gratefully acknowledged and your dedication to Plant Canada is much appreciated.

Plant Canada meetings:

By joining forces of its seven member societies, the Plant Canada offers one large meeting every four years, with numerous invited speakers and other events like teaching workshops, presentations from NSERC, etc. It further creates a loud voice and maintains a strong communication network and collaboration amongst Member Societies and their individual members nationally. Six societies participated in the last five PC meetings organized and lead by one or more of its member societies (with input from all member societies). In 2015, CAPB became a member of Plant Canada.

*List of Plant Canada meetings***:**

Plant Canada 2000 meeting led by CBA and CSPB in London, Ontario

Plant Canada 2003 meeting lead by CBA in Antigonish, Nova Scotia,

Plant Canada 2005 meeting lead by CSPP in Edmonton, Alberta,

Plant Canada 2007 meeting lead by CPS in Saskatoon, Saskatchewan,

Plant Canada 2011 meeting lead by CSA and CSHS in Halifax, Nova Scotia

Plant Canada 2015 Meeting led by CBA and was held jointly with Botanical Soc. of America in Edmonton, Alberta

Current meeting:

Plant Canada 2019 Meeting lead by CSPB in Guelph, Ontario

The current meeting would not have been possible without the hard work and dedication of **Plant Canada 2015 Meeting Scientific Organizing Committee:** Geoffrey Wasteneys, chair (Canadian Society of Plant Biologists), Abdelali Hannoufa (Canadian Association for Plant Biotechnology), Art Davis (Canadian Botanical Association), Lone Buchwaldt (Canadian Phytopathological Society), Jaswinder Singh (Canadian Society of Agronomy), Valérie Gravel (Canadian Society for Horticultural Science), Rory Degenhardt (Canadian Weed Science Society); **Local Arrangements Committee:** Barry Micallef (Chair) and **Fundraising Committee**: Robert Mullen and Barry Micallef (Co-chairs), Plant Canada 2019 meeting website webmaster: Michael Stasiak (CSPB), and the **Plant Canada Board of Directors.** Plant Canada acknowledges **the generous contributions from our sponsors** for Plant Canada 2019 meeting in Guelph, Ontario.

Join Plant Canada

Any society or organization can become a member of Plant Canada, which is free, as long as the organization's interests are related to plant science disciplines in Canada. The applications can be submitted to the Plant Canada Board for consideration. We believe that collectively we can advance plant science in Canada.

In closing, it has been a busy, challenging and rewarding four-year term for me. I thank my former employer, Agriculture and Agri-Food Canada for allowing me to contribute to Plant Canada as its President from 2015 to until my retirement in April 2018. Special thanks to my husband, Dr. Andrew Piggott, for his patience and encouragement during my four-year term as the President of Plant Canada. I offer a heartfelt thank you to the seven Plant Canada member societies for giving me the opportunity to serve the organization and to represent you nationally and internationally. I hope you feel that I have served the Plant Canada well.

Respectfully submitted,

Dr. Deena Errampalli

President, Plant Canada (2015-19)

For more information on Plant Canada visit our

website at http://www.plantcanada.ca/
Facebook: https://www.facebook.com/PlantCanada/
Twitter: https://twitter.com/plantcanada

Welcome Address from Plant Canada

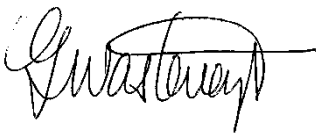
On behalf of the Scientific Program Organizing Committee, I welcome you to Plant Canada 2019. All seven Plant Canada member Societies and Associations participated in a planning process that began over two years ago. One goal was to put together a program reflecting our diverse interests, while highlighting excellence that will be of broad interest to all attendees. I believe that we have achieved that goal.

The theme Plant Canada 2019, *Communicating Innovation in Plant Science* reflects the scientific achievements that will be communicated by our twelve invited plenary speakers, and will be the focus of a keynote lecture by media personality Dan Riskin, who will provide insights into effective communication of the work we do to the broader community. How we communicate the work we do as plant scientists is of critical importance, particularly these days, as we face serious environmental challenges. It is clear that our research activities have enormous potential for addressing these challenges. Convincing governments and funding agencies to prioritize what we do, while heading off misconceptions surrounding and opposition to the biotechnologies we rely on, requires a concerted effort across the fields of plant biology.

In addition to the twelve plenary lectures, the Plant Canada 2019 program includes 212 oral presentations in the concurrent sessions, and more than 225 poster presentations. Several workshops, information sessions pre-conference tours and field trips will complement the scientific program. Be sure to attend the trade displays of our sponsors in the exhibit hall, as well as the sponsor information session on Sunday afternoon.

A huge team effort had gone into organizing the scientific program and coordinating the events of this meeting. Along the way, we have been guided by the Plant Canada President Deena Errampalli, and assisted by the Plant Canada Secretary Diane Edwards. The event would be impossible without huge efforts from the Local Arrangements Committee led by Barry Micallef, and the financial support of our many corporate and academic sponsors, the efforts of the fundraising committee, which was chaired by Robert Mullen and Barry Micallef, and finally the University of Guelph. As President of this year's host society for the 4-yearly Plant Canada meeting, I would also like to extend my gratitude to members of the CSPB executive and communications committee for the extra workload they endured in the run up to this meeting.

Thank you for attending, and I hope you will be inspired at Plant Canada 2019.



Geoffrey Wasteneys

Chair, Scientific Program Organizing Committee for Plant Canada 2019

Plant Canada 2019 Organizational Committees

Scientific Program Organizing Committee

CSPB & Committee Chair: Geoff Wasteneys, UBC geoffrey.wasteneys@ubc.ca
CSHS: Valerie Gravel, McGill U valerie.gravel@mcgill.ca
CSA: Andrew Burt, AAFC Brandon andrew.burt@canada.ca
CWSS: Rory Degenhardt, Dow AgroSciences Edmonton RDegenhardt@dow.com
CPS: Lone Buchwaldt, AAFC Saskatoon lone.buchwaldt@canada.ca
CAPB: Abdelali Hannoufa, AAFC London Abdelali.Hannoufa@AGR.GC.CA
PC & Ex officio: John Markham, U Manitoba John.Markham@umanitoba.ca
PC & Ex officio: Deena Errampalli, Plant Canada, deenaerrampalli@bell.net

Fund Raising Committee

CSPB & Co-Chair: Robert Mullen, U Guelph rtmullen@uoguelph.ca
CSPB & Co-Chair: Barry Micallef, U Guelph bmicalle@uoguelph.ca
CBA: Art Davis, U Saskatchewan art.davis@usask.ca
CPS: Lone Buchwaldt, AAFC Saskatoon lone.buchwaldt@canada.ca
CSHS: Karen Tanino, U Saskatchewan karen.tanino@usask.ca,
Youbin Zheng, U Guelph yzheng@uoguelph.ca
CAPB: Rima Menassa, AAFC London rima.menassa@canada.ca
CSA: Rigas Karamanos, Koch Fertilizer Canada, Calgary Rigas.Karamanos@kochind.com
CWSS: Mathew Underwood, Syngenta Canada, Plattsville Matthew.Underwood@syngenta.com
PC: Gayle Jesperson, Plant Canada Treasurer, gdjesperson@gmail.com

Local Arrangement Committee

CSPB & Committee Chair: Barry Micallef, U Guelph bmicalle@uoguelph.ca
CPS: Lone Buchwaldt, pre-conference tour organizer, AAFC Saskatoon lone.buchwaldt@canada.ca
CBA: Mihai Costea, pre-conference tour organizer, WLU mcostea@wlu.ca
CSPB: Bernie Grodzinski, controlled-environment facility tour organizer, U Guelph bgrodzin@uoguelph.ca
CAPB: Max Jones, audiovisual, U Guelph amjones@uoguelph.ca
CSPB: Mina Kaviani, postdoc rep, U Guelph mkaviani@uoguelph.ca
CSA: Istvan Rajcan, pre-conference tour organizer, U Guelph irajcan@uoguelph.ca
CSHS: Sara Stricker, grad student rep, U Guelph strickes@uoguelph.ca
CSPB: Ian Tetlow, poster logistics, U Guelph itetlow@uoguelph.ca
CSHS: Laura Van Eerd, pre-conference tours organizer, U Guelph-Ridgetown Campus lvaneerd@uoguelph.ca

Individual reports

from the member societies of Plant Canada

Plant Canada 2019 is a joint meeting of the following seven scientific societies from Canada:

Canadian Association for Plant Biotechnology

Canadian Botanical Association

Canadian Phytopathological Society

Canadian Society of Agronomy

Canadian Society for Horticultural Science

Canadian Society of Plant Biologists

Canadian Weed Science Society

Canadian Association for Plant Biotechnology

The Canadian Association for Plant Biotechnology was founded in 1970-1971 as the International Association for Plant Biotechnology Canada (IAPB Canada). The association went through multiple name changes (in 1998 and 2006), and in 2015, renamed as **Canadian Association for Plant Biotechnology (CAPB)**. Our goals are to promote interaction among Plant Biotechnology researchers in Canada, liaise with the International Association of Plant Biotechnology, advocate for Plant Biotechnology research, bridge the gap between academia/basic research and industry and serve as a contact point for Plant Biotechnology-related information in Canada. CAPB provides a forum of communication for its members to further the development of Plant Biotechnology in Canada. It also provides an excellent opportunity for new collaborations among industry leaders and researchers, helping to connect people who conduct plant biotechnology research. The association holds biennial meeting in Canada. More information can be found at https://www.canadianplantbiotech.ca/

CAPB Executives (2019-2020)

President, National Correspondent and Government Liaison	Dr. Rima Menassa
Vice-President, Deputy National Correspondent and Secretary	Dr. Abdelali Hannoufa
Director of Communication	Dr. Dominique Michaud
Academic and Industry Liaison	Dr. Sangeeta Dhaubhadel
Membership	Dr. Susanne Kohalmi
Treasurer	Dr. Pankaj Kumar Bhowmik
PostDoc and Student Affairs	Mr. Dinesh Adhikary
Webmaster	Dr. Gary Tian
Immediate past president as Observer	Dr. Yafan Huang

More information on Executive Committee can be found at https://www.canadianplantbiotech.ca/iapb-canada-executive-committe/

CAPB at Plant Canada 2019 Meeting

Guelph, ON

Co-sponsored Symposia

- Genome editing enables disease resistance in plants - **Dr. Bing Yang**
- Improving photosynthesis in C3 plants- **Dr. Maureen Hanson**

CAPB-led concurrent sessions and workshops

- CAPB1: Bioproducts production in plants
- CAPB2: Genome editing and molecular plant improvement
- CAPB3: Genome editing workshop

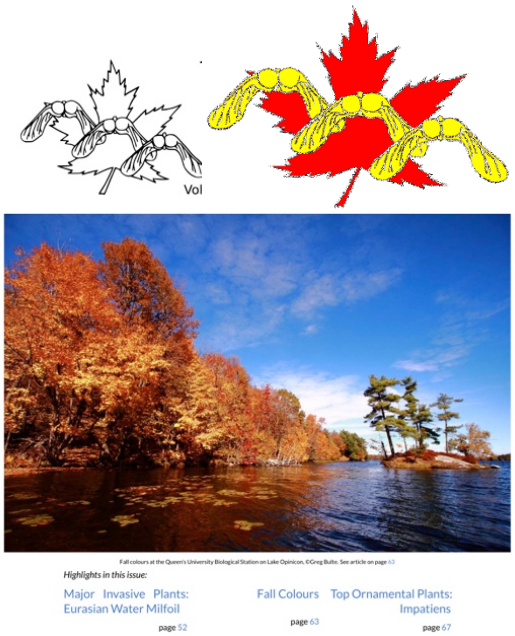
CAPB and Plant Canada Business and Social Meetings

- Executive meeting on July 7 at 4:00-5:30 pm
- **Pioneering & Distinguished Canadian Plant Biotechnologist Award winner, Dr. Margie Gruber**, will be receiving the award on July 7 at 6:45-7:30 pm
- Annual General Meeting on July 8 at 11:15 am-1:00 pm
- CAPB co-sponsored Student Social for student members on July 8 at 8:30-10:30 pm
- Two oral and two poster presentation awards for students will be presented on July 10 at 12:30-1:30 pm
- Travel awards for students will be presented on July 10 at 12:30-1:30 pm

Canadian Botanical Association
L'Association Botanique du Canada

The CBA-ABC

- provides a national organization for botanists in Canada and encourages the participation of professional botanists working in universities, colleges, schools, government and industry, as well as interested students, technicians and amateurs
- represents Canadian botany and botanists in the national and international arenas and responds rapidly and professionally on matters that are of concern to Canadian botanists
- provides a national annual meeting for botanists at which there are opportunities to give papers, attend symposia, participate in field trips, and to meet in smaller, special interest sections that reflect the main areas of botanical activity in Canada
- provides means for studying issues that particularly concern botanists, and provides national support to certain activities
- regularly publishes a bulletin that provides news of botany and botanists in Canada



Join us in 2020 for our Annual Meeting!!

At Université du Québec en Abitibi-Témiscaminque (UQAT)
in Rouyn-Noranda, Québec

Theme: ***Heading North - Botany in Canada's Boreal Biomes***
May 31 – June 4, 2020

Plenary Symposium: "Botany Heading North" plus Section Symposia, Spring Flowers,
and a Field Trip to the Research Forest and Station

Contributed Papers including Student Talks and Posters,
plus up to 5 post-conference field trips

ANNUAL AWARDS PROVIDED BY CBA - ABC

Each year, the Canadian Botanical Association/L'Association Botanique du Canada provides awards to botanists studying in Canada and/or to Canadian botanists studying abroad. CBA-ABC offers a number of awards to support students investigating botanical topics.

STUDENT AWARDS:

- for papers published within the past year ($500-1000)
Porsild-Consaul Award for the best paper in systematics and phytogeography.
Stan Rowe Award for the best paper in plant ecology.
Taylor A. Steeves Award for the best paper in plant development or structure.
Luella Weresub Award for the best paper in mycology or lichenology.

- for best presentations at the Annual Meeting ($500)
Lionel Cinq-Mars Award for the best oral presentation.
Iain and Sylvia Taylor Award for the best poster presentation.

- for travel to participate at the Annual Meeting ($150-500)
John Macoun Travel Bursary for graduate students.
Keith Winterhalder Travel Award for undergraduate students.

- for research ($1300)
Laurie Consaul Northern Research Scholarship for research in Canada's north.

MAJOR AWARDS:

George Lawson Medal for excellence in contributions to Canadian botany.

Mary Elliott Service Award for meritorious service to CBA-ABC.

Magister Award for excellence in teaching plant science within Canada.

For further information about CBA-ABC activities and awards,
please visit **www.cba-abc.ca**

CBA-ABC Board of Directors for 2018-2019

President - Dr. Julian Starr (University of Ottawa)
President-Elect - Dr. Nicole Fenton (Université du Québec en Abitibi-Témiscamingue)
Past-President – Dr. Art Davis (University of Saskatchewan)
Vice-President / Liaison for Plant Canada – Dr. John Markham (University of Manitoba)
Secretary – Ms. Deborah Metsger (Royal Ontario Museum)
Treasurer – Dr. Shelley Hepworth (Carleton University)
Editor, *CBA-ABC Bulletin* – Dr. Tyler Smith (Agriculture & Agri-Food Canada, Ottawa)
Webmaster – Dr. Zoe Panchen (University of British Columbia)
Directors – Dr. Richard Caners (Royal Alberta Museum) (west)
Ms. Nadia Cavallin (Royal Botanical Gardens) (east)
Dr. Bruce Ford (University of Manitoba) (west)
Dr. Julissa Roncal (Memorial University of Newfoundland) (east)
Dr. Patrick von Aderkas (University of Victoria) (west)
Student Representative – Mr. Dylan Johnston (University of Saskatchewan) (west)
Student Representative – Ms. Kirsten Reid (Wilfrid Laurier University) (east)

Executive Assistant – Ms. Vanda Wutzke (Aberdeen, Saskatchewan)

CBA-ABC Section Chairs for 2018-19

DEVELOPMENT SECTION
Co-Chairs: Dr. Simon Chuong (University of Waterloo)
Dr. Moira Galway (Saint Francis Xavier University)

ECOLOGY SECTION
Co-Chairs: Dr. André Arsenault (Atlantic Forestry Centre)
Dr. Nicole Fenton (Université du Québec en Abitibi-Témiscamingue)

MYCOLOGY SECTION
Co-Chairs: Dr. Shannon Berch (British Columbia Ministry of the Environment)
Dr. Hugues Massicotte (University of Northern British Columbia)

SYSTEMATICS AND PHYTOGEOGRAPHY SECTION
Co-Chairs: Dr. Geraldine Allen (University of Victoria)
Ms. Deborah Metsger (Royal Ontario Museum)

TEACHING SECTION
Co-Chairs: Dr. Adam Brown (University of Ottawa)
Dr. Martha Mullally (Carleton University)

Canadian Phytopathological Society / La Société Canadienne de Phytopathologie

The Canadian Phytopathological Society (CPS) is a scientific society for plant pathologists which was formed in 1929. The objective was to encourage research, education, and the dissemination of knowledge on the nature, cause, and control of plant diseases. The society has more than 350 members in Canada and abroad. Its members have expertise in all facets of plant pathology from applied field research to investigations of host-pathogen interactions at the molecular level. The membership include graduate students, postdoctoral fellows, research associates, technical assistants, extension plant pathologists, research scientists and university professors. In addition, several grower organizations and private companies are sustaining members.

A Board of Directors and several committees guide the society's work. For 2018-2019 the CPS Board consists of

President	Dilantha Fernando
President Elect	Barry Saville
Vice President	Lone Buchwaldt
Past President	Denis Gaudet
Secretary	Tom Fetch
Treasurer	Kenneth Conn
Membership Secretary	Vikram Bisht
CJPP Editor in Chief	Zamir Punja / Steven Strelkov
Senior Director at Large	Phillippe Tanguay
Junior Director at Large	David Joly

The CPS is responsible for publication of the *Canadian Journal of Plant Pathology* (CJPP) through Taylor and Francis. This year, the CJPP's editorial board was enhanced by adding more Section and Associate Editors to ease the flow of manuscripts through the review process. The CPS is also considering whether to publish all papers as Open Access. The society publishes a quarterly Newsletter and maintains a web site https://phytopath.ca/. This year marks the 100th Anniversary for publication of the Canadian Plant Disease Survey (CPDS). Past surveys are assessable through the CPS web site, but in the future they will be published in the CJPP. The society presents several types of awards including 'Award for Outstanding research', 'Outstanding young scientist award' and several awards for graduate students.

To promote communication among plant pathologists CPS members have the opportunity to meet nationally once a year. In addition, there are eight regional societies that also meet annually. Furthermore, the CPS collaborates with the American Phytopathological Society (APS) and the British Society of Plant Pathology (BSPP) primarily by amalgamation of annual meetings and funding of invited speakers. This year, the CPS will celebrate its 90th Anniversary during the Plant Canada meeting.

The following highlights CPS' participation during Plant Canada

Sunday July 7

CPS Field Tour #4 Horticultural and Agricultural plant pathology on farms from University of Guelph to Niagara, from 8 AM to 5 PM organized by Dr. Albert Tenuta, OMAFRA.

Monday July 8

CPS concurrent sessions.

CPS President's Reception by Invitation, 7:30-9:30 PM at Delta Hotels, Guelph Conference Centre.

Tuesday July 9

CPS concurrent sessions.

CPS Annual General Meeting 11:15 AM – 1:00 PM. Please pick up a provided bagged lunch and bring it to the meeting.

CPS 90th Anniversary and Awards Banquet at Delta Hotels, Guelph Conference Centre.

Wednesday July 10

CPS/CSHS Plenary Session with three invited speakers Dr. Mary Ruth McDonald, University of Guelph, Dr. Richard Bélanger, Université Laval and Dr. Diane G.O. Saunders, John Innes Centre, UK.

Canadian Society of Agronomy
La Société Canadienne d'Agronomie

agronomycanada.com | @agronomycanada

The Canadian Society of Agronomy (CSA) is dedicated to enhancing cooperation and coordination among agronomists, recognizing significant achievements in agronomy and providing the opportunity to report and evaluate information pertinent to agronomy in Canada.

Attending annual meetings, volunteering for service, and contributing to our society journal help our members to network and connect to fellow agronomists. CSA membership stands at 135 as of May 1, 2019.

The CSA offers a robust yearly awards and recognition program.

Ali Navabi Student Travel Award

The Student Travel Awards were established in 2013 to encourage student attendance at the CSA Annual Meetings and is available to any graduate student CSA member. The award is $500 and up to 4 are awarded annually. Students participate in oral and poster presentations at the AGM Conference.

Recently, CSA board named the travel awards after Dr Ali Navabi's name in his memory and contributions to the society.

Graduate Student Pest Management Award

The CSA Pest Management Award of $500 is made available annually to qualified graduate students enrolled at Canadian universities with research programs relevant to pest management. The award comes with a travel grant of up to $1,000 to allow the successful applicant to attend and present at the CSA annual conference.

Graduate Student Presentation and Poster Awards

The CSA provides a number of awards for the best oral and poster presentations given by student members. These awards are given to acknowledge the contributions that graduate students make to the society and to encourage excellence in graduate student research and presentation. The awards range from $250 - $700.

Early Career Agronomist

The Early Career Agronomist Award is given to a candidate who has made an outstanding contributjion to Agronomy, is within 10 years of the start of his/her career or within 10 years of earning his/her last degree. The award includes $500 and an inscribed plaque.

CSA Fellow Award

The CSA awards a Fellowship to a member of the CSA with at least 10 years membership and a distinguished record of service in agronomy. The recipient is named “Fellow of the Canadian Society of Agronomy” and is presented with $500 and an inscribed plaque at the AGM.

Best Paper Award

The CSA offers an award each year for the best agronomy-related paper published that year in The Canadian Journal of Plant Science (CJPS). This award is based on reviews by the agronomy Editor of CJPS and a panel of CSA members. The award is an honorarium of $500 plus and invitation to give an oral presentation of the best paper at the CSA AGM.

Distinguished Agronomist

The Distinguished Agronomist Award is given to a duly nominated member of 15 years or more of regular membership who is nearing retirement (or is retired) and has a distinguished record of service to the CSA and in the field of agronomy. The award includes an inscribed plaque and $500.

2018 award winners were Dr. Yousef Papadopoulos (Distinguished Agronomist), Dr. Tarlok Singh Sahota (CSA Fellow Award), Afsaneh Sedaghatkish (Pest Management Award) and Dr. Bill Deen (Best Paper in CJPS for previous year). 2018 Travel Awards recipients included Amy Mangin (University of Manitoba), Caleb Niemeyer (University of Guelph), Cameron Ogilvie (University of Guelph) and Asfaneh Sedaghatkish (University of Guelph). The Student Oral and Poster Competition was judged by Dr. Mumtaz Cheema, Dr. Jaswinder Singh and Dr. Sheri Strydorst. Judges assessed 5 student presentations for their scientific merit, content and presentation style. In the category of 15-minute oral presentations, first prize ($750) was awarded to Cameron Ogilvie MSc. Student at the University of Guelph, Second prize ($500) was awarded to Caleb Niemeyer, MSc. Student at the University of Guelph.

In the category of Poster/5-Minute Rapid Oral presentations, first prize ($500) was awarded to Amy Mangin, PhD student at the University of Manitoba and the Second prize ($250) was awarded to Amy Mangin.

The Canadian Journal of Plant Science (CJPS) is our society journal and members participate by contributing manuscripts, providing peer review, and serving on the editorial board. The CJPS is supported by three societies: the CSA, the Canadian Weed Science Society (CWSS), and the Canadian Society of Horticultural Sciences (CSHS). The board was restructured in 2018 and now has three technical editors (TE), Dr. Bourlaye Fofana (CSHS), Dr. B.W. Thomas (CSA) and Dr. Amit Jhala (CWSS). The goal when recruiting TE's is to ensure the representation of all three societies and corresponding disciplines/expertise. The Editor-in-Chief is Dr. Brian Beres.

CSA members are eligible for a deeply discounted rate for The Canadian Journal of Plant Science (CJPS) and the Canadian Journal of Soil Science (CJSS). The regular rate for CJPS or CJSS is $526 for the electronic version and $634 for print and electronic. CSA Members pay $50.00 for the electronic version and $125 for the print and electronic versions.

The CSA executive for 2018-2019 includes Dr. Helen Booker (Past President); Dr. Jaswinder Singh (President); Dr. Sheri Strydhorst (President-elect); Dr. Douglas Cattani (Secretary, Treasurer); Dr. Harpinder Randhawa and Laurel Thompson (Western Directors); Dr. Mumtaz Cheema and Dr. Andrew Burt (Eastern Directors) and Caleb Niemeyer (Student Representative). The CSA executive met via conference call 7 times over the year and released fall and spring newsletters to our membership.

In 2018, the CSA executive organized a joint ASA-CSSA-CSA conference ***Enhancing Productivity in a Changing Climate***, which took place in Baltimore, Maryland, USA from November 4 to 7, 2018. The CSA plant breeding committee hosted a symposium entitled *Germplasm exchange and the future of plant breeding*. The CSA awards and recognition luncheon and annual general meeting was held during the conference. 25 CSA members were in attendance. Outstanding scientific oral and poster presentations were recognized.

The CSA executive is organizing a joint CAPB-CBA-CPS-CSA-CSHS-CSPB-CWSS conference Communicating Innovation in Plant Science, which will take place in Guelph, Ontario from July 7-10, 2019. The CSA will host two sessions entitled Plant Breeding & Germplasm Exchange and Cropping Systems & Agronomy. The speakers for this session are being determined from the submitted abstracts which are due May 17, 2019. More details will be available after that.

The 2019 CSA awards recognition luncheon and annual general meeting will be held during Plant Canada 2019 on Wednesday, July 10th at 11:30 am – 1:00 pm. Outstanding scientific oral and poster presentations will be recognized by the CSA Graduate Student Oral and Poster Awards Program. There will also be a graduate student social event at Plant Canada on July 8th in the evening which is supported by CPS, CSHS and CSA.

Student travel to society meetings and conferences is sponsored in part by the Agricultural Institute of Canada (AIC). Canadian Science Publishing (CSP) also provides financial support to CSA for the awards and recognition program. The CSA is grateful to AIC and CSB for their support.

It is expected that the 2020 CSA Annual General Meeting will be held in conjunction with The International Crop Science Congress 2020 from June 21-25, 2020 in Saskatoon, Saskatchewan. An MOU is being drafted between CSA and ICS and this should be confirmed in the near future.

For more information on CSA Membership or our awards program contact Nancy Zubriski, PO Box 637, Pinawa, Manitoba, R0E 1L0, 204 299-2327, nzubriski@gmail.com or visit our website at agronomycanada.com and follow us on twitter @agronomycanada.

Canadian Society for Horticultural Science – Société Canadienne de Science Horticole

Founded in 1956, the Canadian Society for Horticultural Science – Société Canadienne de Science Horticole (CSHS-SCSH) is a professional society devoted to fostering, promoting and encouraging research and education in all branches of horticultural science in Canada. With a countrywide representation, our members are from a variety of horizons: scientists, educators, students, extension agents and industry personnel involved in research, teaching, information and technology related to all fields of horticulture.

Current Executive Board (2018-2019)

Due to the diversity of horticulture production in Canada, one of the priorities of the CSHS is to have a pan-Canadian representation on its board of directors. A new member representing Northern regions of Canada was added this year to the CSHS executive board. Therefore, the CSHS Executive board now includes members representing all regions of Canada.

While we practice a progression within the board, our members are encouraged to submit their candidacy to any position available. **In fact, we are currently recruiting for a representative from the Atlantic region.** Terms are for 2 years with the possibility of 2 consecutive terms at the

same position. Please contact the CSHS secretary (bourlaye.fofana@canada.ca) if you are interested in the position.

CSHS Annual Conferences

The CSHS also prioritizes travelling around the country for its annual meetings. Following a conference in Vancouver in 2017, this past year, the CSHS held its conference in Niagara Falls, Ontario on October 4th to 6th 2018. The conference was a huge success with 190 delegates. The conference was chaired by Dr Karen Tanino and followed the Canadian Greenhouse Conference. A one-day symposium on Cannabis production, chaired by Dr. Youbin Zheng, attracted several participants and created a good platform for discussion on the subject. Delegates also had the opportunity to participate in a pre-conference tour highlighting horticulture production in the Niagara region as well as a Haskap Workshop.




In 2019, the CSHS is proud to be part of the Plant Canada 2019 Conference in Guelph, Ontario. The CSHS has organized 4 concurrent sessions targeting topics such as horticulture production under controlled environment, Pre and Post-harvest crop quality and horticultural field production.

In 2020, our annual meeting will be held in the Atlantic region, with Dr. Bourlaye Fofana as the chair. **If you are interested in participating in the organization of the conference, please contact the CSHS secretary** (bourlaye.fofana@canada.ca).

CSHS Student Committee

Students are an integral part of the CSHS and their involvement in the Society is important and valued. A Student board was implemented in 2016 within the Society to support students' initiatives and the Student Committee has been very busy this year.

Sara Stricker (CSHS Student Representative and Student Committee Chair) has organized the student social event for all of the societies attending the Plant Canada 2019 Conference. **We are encouraging all students to participate in this fun event, which will include motivational talks, time to network with other students and plant science trivia!**

In addition, this past year, Ariana Forand (Saskatchewan Representative) and Zahra Charkhzarrin (Quebec Representative) both visited elementary schools in their region to talk about horticulture and grow plants with the students. Varinder Sidhu (Vice-Chair of the student committee) held an information session at McGill University for CSHS and Plant Canada whereas Sarah Drury (Ontario Representative) hosted an event for Fascination of Plants Day at Wellington Woods Community Center in Guelph.




Other events are planned for the upcoming year so follow their activities on the CSHS on-line platforms, including the CSHS website, Facebook page and Instagram account!

We invite CSHS student members to become involved in the Committee. If you are interested, contact the Student Committee Chair, Sara Stricker (strickes@uoguelph.ca).

Becoming a member of the CSHS

Numerous benefits are offered to CSHS members including:

- Significantly reduced registration fees at the annual CSHS conferences and at the Plant Canada Conference
- Reduced page charges to publish in the Canadian Journal of Plant Science
- Timely direct mail alerts to jobs, grant opportunities, etc.
- Eligibility to the Best CJPS Paper award for horticulture (which comes with an invitation to be a conference speaker

In addition, for students, benefits also include:

- Eligibility for the Awards for oral and poster presentation
- Eligibility for Travel Awards to annual conference
- Community & Extension Funding, which supports students activities in introducing any form of Horticulture science in communities
- Network between members, sharing of experiences about studies and research

For more information and to become a member: www.CSHS.ca

Canadian Society of Plant Biologists Inc.

Société canadienne de biologie végétale inc.

About the CSPB-SCBV

The Canadian Society of Plant Biologists grew out of informal meetings and conferences in the 1950s and was founded in 1958 as the Canadian Society of Plant Physiologists. In 2012, the Society adopted its present name to represent the inclusion of all types of botanical research. CSPB-SCBV Inc. is a not-for-profit corporation and a registered charity. It is a founding member of both **Plant Canada** and the **Global Plant Council** and is a member of the **Partnership Group for Science and Engineering**.

Botany, published by NRC Press, is the official journal of both the CSPB-SCBV and the Canadian Botanical Association.

Our more than 400 members include undergraduate and graduate students, postdoctoral fellows and research associates, professional scientists and a few corporations. Members have interests in [alphabetical order] adaptations to biotic and abiotic stress, biochemistry, bioinformatics, biotechnology, cell and molecular biology, development of research techniques and equipment, education, genomics, metabolism, metabolomics, natural products, physiological ecology, physiology, plant development, and proteomics. Members of the CSPB are engaged in basic and applied research, undergraduate and graduate education, management, extension, and the design and manufacture of scientific equipment.

CSPB-SCBV Executive Committee

President:	Geoffrey Wasteneys (UBC, Vancouver)
Vice President:	Daphne Goring (U of T St. George)
Past President:	Anja Geitman (McGill)
Secretary:	Sherryl Bisgrove (Simon Fraser)
Treasurer:	Sheila Macfie (Western)
Eastern Regional Director:	Robert Mullen (Guelph)
Western Regional Director:	David Bird (Mount Royal)
Communications Director:	Ingo Ensminger (U of T Mississauga)
Education Director:	Steven Chatfield (U of T Mississauga)
Science Policy Director:	Owen Rolland (Carleton)
Senior Director:	Jean-Benoit Charron (McGill)
Student/PDF Representative:	Ryan Eng (Max Plank Institute)

Scientific meetings

The CSPB-SCBV holds its national meeting each summer, in a roughly four-year rotation of joint and solo meetings. Joint meetings include conferences organized by Plant Canada and those run by the American Society of Plant Biologists, as well as ad hoc co-sponsored meetings with other Canadian Societies as opportunities arise.

Eastern Regional Meetings are held in November or December of each year, and Western Regional Meetings are typically held every second or third fall.

Students and postdoctoral scientists feature prominently at our meetings and are known for their high quality oral and poster presentations.

Upcoming CSPB/SCBV Annual General Meetings:

2020 Annual General Meeting: Saskatoon

2021 Annual General Meeting: Dalhousie University, Halifax, Nova Scotia

2022: Plant Biology 2022 (Joint ASPB-CSPB/SCBV), Portland Oregon

Awards provided by the CSPB-SCBV

CSPB-SCBV Gold Medal: for outstanding contributions or service to plant biology
David Gifford Award: for outstanding and original contributions in tree biology
C.D. Nelson Award: for outstanding research contributions to plant biology
Mary E. Spencer Award: for outstanding research in plant biology and active public service engagement by a mid-career researcher
Gleb Krotkov Award: for outstanding service to the Society
Ragai Ibrahim Award: to recognize excellence in publication by graduate students
Carl Douglas Prize: for outstanding contributions to plant biology by a postdoctoral fellow, including originality, productivity and leadership
Ann Oaks Doctoral Scholarship: equivalent to an NSERC PGS-D award
George H. Duff Travel Bursaries: about $10,000 per year is given to students and postdoctoral fellows to support travel to the annual summer meeting.

Becoming a member of the CSPB-SCBV

New members from any discipline within plant biology are welcome to join the CSPB-SCBV. Benefits of membership include reduced registration fees at our conferences and meetings; access to the education, student/pdf funding links and employment pages of our website; eligibility for the various awards, scholarships and bursaries listed above; and above all, inclusion in a dynamic community engaged in research, education and social activities related to plant sciences.

At Plant Canada 2019:

As host society for Plant Canada 2019, CSPB-SCBV has been responsible for chairing the Scientific Program, Local Arrangements, and Fundraising Committees. Our student and post-doctoral representative, Dr Ryan Eng, has organized the two careers workshops, which will run from 11:15 to 12:15 on Monday and Tuesday. The CSPB/SCBV Annual Business Meeting will be held on Wednesday at 11:15, at which we will announce our Presidents Awards. Our Society Social event will be held from 7 to 9 pm on Monday in the Bullring, and, along will other participating societies and associations, we are supporting the student social event, also on Monday evening. Two of our 2018 Awardees feature in the plenary talks; our C.D. Nelson Award winner Jaswinder Singh (McGill) will speak in the Tuesday morning session, while our Society Medal winner Bill Plaxton (Queen's) gives the final plenary lecture of the meeting on Wednesday afternoon. We will announce our 2019 major award winners at Sunday evening's awards ceremony.

For more information, please visit http://cspb-scbv.ca/

Canadian Weed Science Society
Société canadienne de malherbologie

The CWSS-SCM is a non-profit professional society for scientists, agronomists, economists, and students interested in weed science. The society is widely recognized in Canada and beyond for its national leadership in bringing together research and information on science and management related to plants potentially impacting the environment, economy and society. The three major goals of the CWSS-SCM are to: (1) be the Canadian scientific authority representing professionals working in weed science, 2) expand the CWSS-SCM network of members and partners, 3) ensure good governance.
Some highlights of 2018-2019:

The CWSS-SCM held its 72nd annual meeting in Niagara Falls, ON in November 2018. The full-day plenary session focused on "New Frontiers in Weed Management", with a range of national and international speakers covering topics such as hyperspectral technologies, big data, advances in mechanical weed control, and ethics. Additionally, a fascinating session on Molecular Biology was added to the program for the first time. The graduate student presentations were again a highlight of the meeting, and we had 14 such speakers with best talk award going to Lauren Benoit from the University of Guelph for a presentation on multiple resistant waterhemp. For more details, see the meeting archive at https://weedscience.ca/wp-content/uploads/2018/11/CWSS-SCM-2018-Niagara-Meeting-Package-Nov-15.pdf.

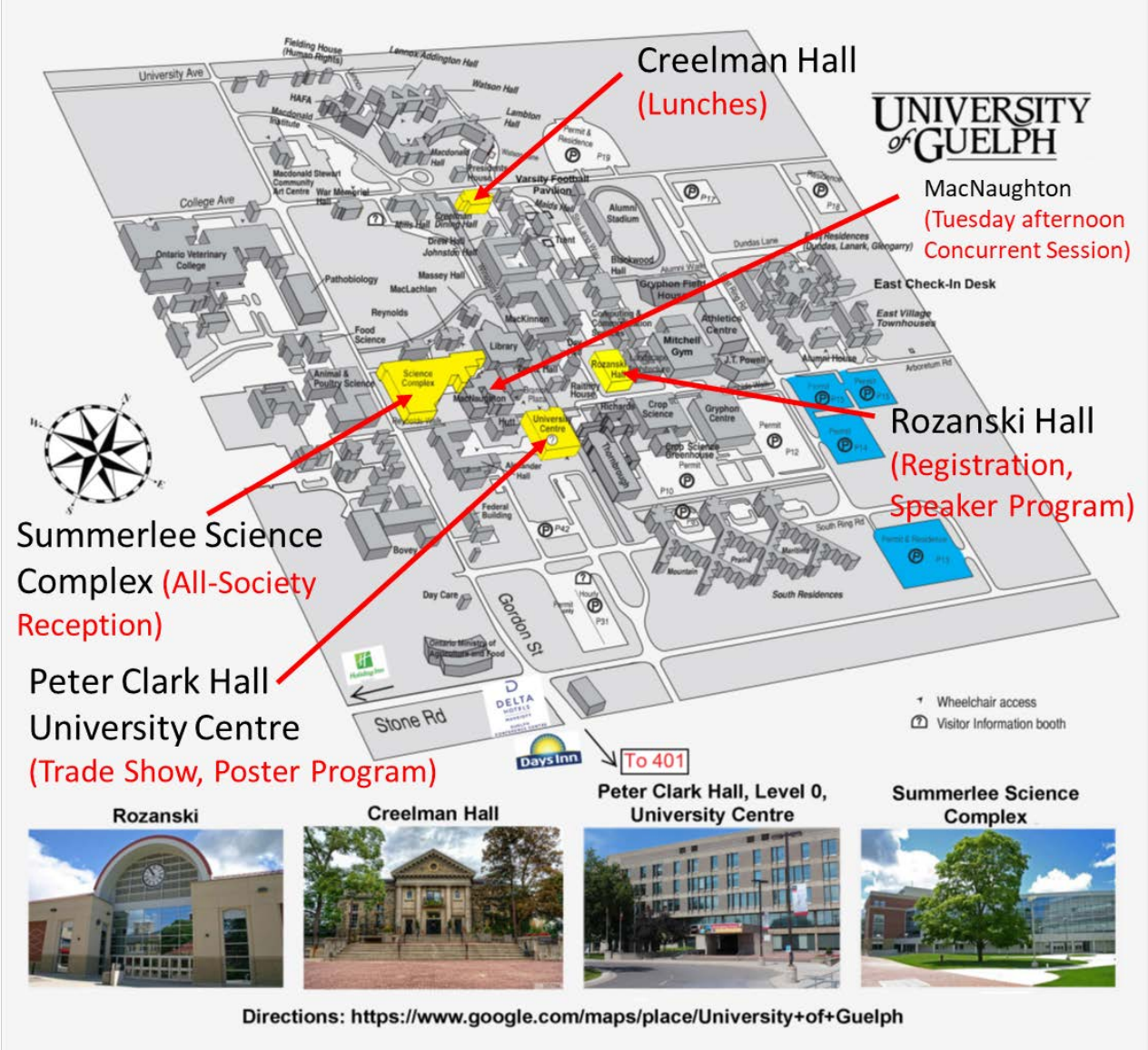
The CWSS-SCM proudly awarded Dr. Linda Hall a Fellow Award at the 2018 annual meeting. Linda is a professor in the Faculty of Agriculture Life and Environmental Science at the University of Alberta. She has enjoyed a productive and distinguished career in weed science and transgenic crop biosafety. After spending 12 years as a Research Scientist with Alberta Agriculture, Linda joined the University of Alberta in 2006. Linda is a world-renowned weed scientist and pioneer of research on the environmental impacts of transgenic crops and gene flow via and pollen and seeds. She has also contributed to the development of the next generation of weed scientists through teaching, mentoring and training of undergraduates and graduate students. Linda has been an active member of the CWSS-SCM for many years and served as president from 2016-2017.

The CWSS-SCM will host its 73rd annual meeting from November 18-21, 2019 at the Grand Okanagan Resort in Kelowna, British Columbia. An exciting scientific agenda is taking shape for this meeting and all weed science professionals, consultants and stakeholders should mark the dates on their calendar. The 74th annual meeting will be in Gatineau, Quebec in November of 2020. Details can be found at https://weedscience.ca/meeting-home/.

Current Board of the CWSS-SCM is below:

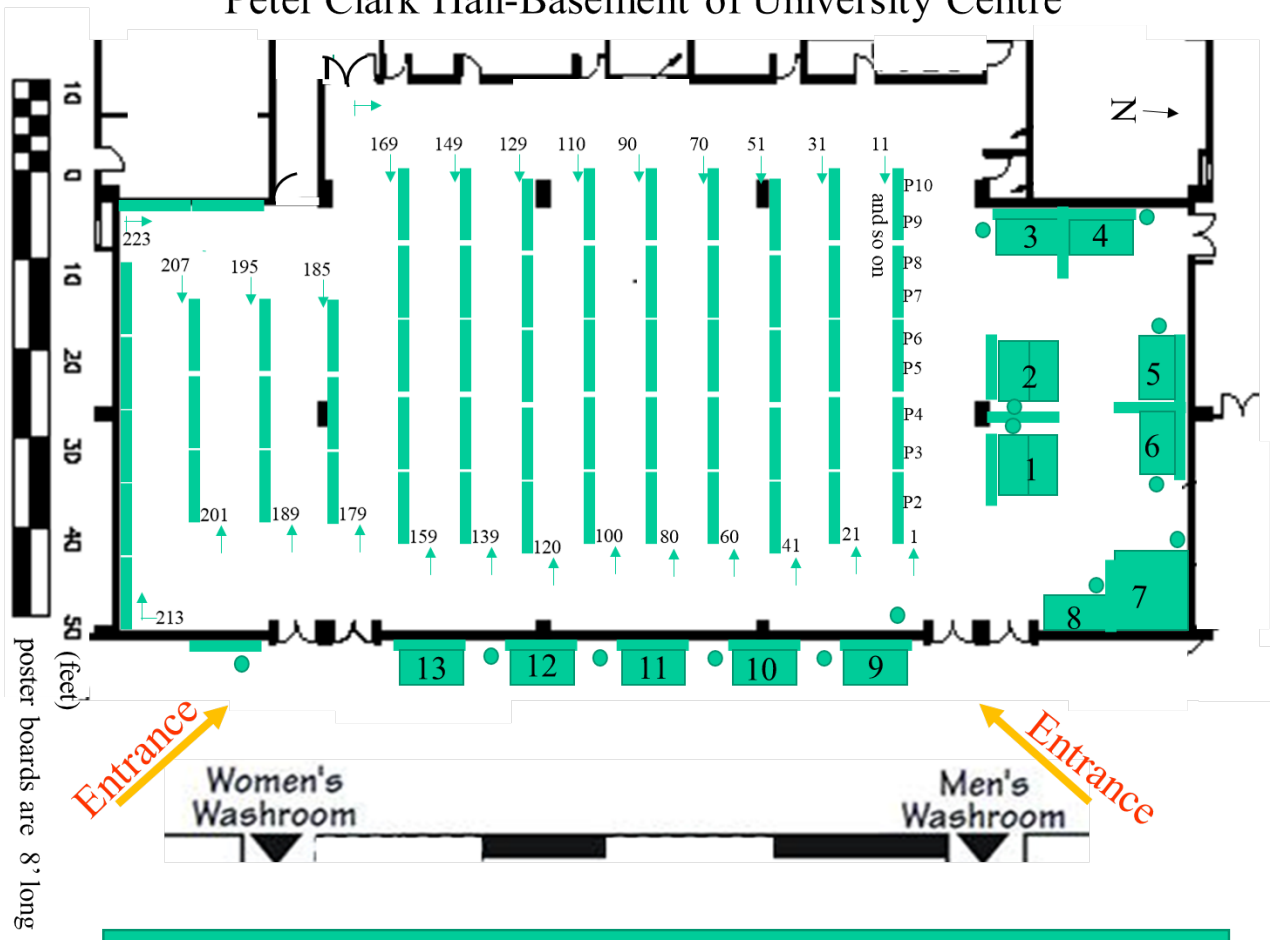
President: Rory Degenhardt, Integrated Field Sciences Research Leader – Canada, Corteva Agriscience, Edmonton, AB
Past-President: Eric R. Page, Research Scientist, Agriculture and Agri-Food Canada, Harrow, ON
1st Vice-President: François Tardif, Professor, Department of Plant Agriculture, University of Guelph, Guelph, ON
2nd Vice-President: Marie-Josée Simard, Research Scientist, Agriculture and Agri-Food Canada, Saint-Jean-sur-Richelieu, QC
Treasurer: Allison Hayward, Field Development Representative, FMC, Kitchener, ON
Secretary: Breanne Tidemann, Research Scientist, Agriculture and Agri-Food Canada, Lacombe, AB
Regulatory Representative: Wendy Asbil, Plant Health and Biosecurity Directorate, Canadian Food Inspection Agency, Ottawa ON
Regulatory Representative: Michael Downs, Herbicides and Plant Growth Regulators Efficacy and Sustainability Assessment Division, Pest Management Regulatory Agency, Ottawa ON
Webmaster and Publications Director: Robert Nurse, Research Scientist, Weed Science, Agriculture and Agri-Food Canada, Harrow ON
Research Representative: Scott White, Assistant Professor, Faculty of Agriculture, Agricultural Campus, Truro, NS
Croplife Canada Representative (East): Matt Underwood, Field Biologist, Syngenta Canada, Cambridge, ON
Croplife Canada Representative (West): Colleen Redlick, Technical Service Specialist – Northern Saskatchewan, BASF Canada Inc, Saskatoon, SK
Member-At-Large (East): Andrew McKenzie-Gopsill, Research Scientist – Weed Science, Agriculture and Agri-Food Canada, Charlottetown PE
Member-At-Large (West): Jessica Weber, General Manager, Western Applied Research Corporation (WARC), Scott, SK
Graduate Student Representative: Jonathon Rosset, Department of Plant Science, University of Manitoba, Winnipeg, MB
2019 Local Arrangements Chairs: Ken Sapsford and David Clements

Map of the University of Guelph



Poster and Exhibitor Area for Plant Canada 2019

Peter Clark Hall-Basement of University Centre



Exhibitors at Plant Canada 2019

- BASF-2
- Biochambers Inc.-3
- Canadian Science Publishing-4
- Cedarlane-8
- Conviron-7
- Hoskin Scientific-5
- Innotech Alberta-1
- LI-COR Biosciences-6
- New England Biolabs-12
- Norgen Biotek Corp.-10
- Platform Genetics-13
- Taylor and Francis Group-9
- We Vitro Inc.-11

PROGRAM SCHEDULE OVERVIEW FOR SATURDAY JULY 6, 2019

CPS Financial Advisory Committee ***5:00pm-9:00pm*** Delta Inn Hotel

EXHIBITOR SET-UP: Starting from Noon until 6:00pm

POSTER SET-UP: Early Poster Set-up available from 3:00pm – 6:00pm

PROGRAM SCHEDULE OVERVIEW FOR SUNDAY JULY 7, 2019

8:00 am – 4:00 pm Registration in the Rozanski Concourse

	POSTER VIEWING AND EXHIBITS AT PETER CLARK HALL FROM 8:00am – 7:00pm
Time/ Departure	**TOURS DEPARTURE from Rozanski Hall** (please wait at back entrance facing Trent Lane).
8:00am	**TOUR 4**: Niagara Area Plant Pathology Field Tour
9:30am	**TOUR 3**: Cambridge Area Field Tour and Hike
1:45pm	**TOUR 6**: University of Guelph Arboretum Tour
8:00am-1:00pm	**CPS Outgoing Board Meeting** Delta Inn Hotel
11:00 – 1:00pm	**CSPB Outgoing Executive Meeting** Rozanski r. 106
2:00 – 4:00pm	**Plant Canada Outgoing Board and Annual General Meetings** Rozanski r. 106
4:00 – 5:30pm	**CAPB Outgoing General Meeting** Rozanski r. 106
4:00 – 5:30pm	**CBA Outgoing Executive Meeting** Rozanski r. 108
4:15 – 5:15pm	**Workshop 1** *Sponsor Introduction Workshop* r. 104
5:30 – 5:45pm	Opening Remarks in Rozanski room 104 • Dr. Deena Errampalli, President of Plant Canada • Dr. Malcolm Campbell, University of Guelph Vice-president (Research) • Dr. Geoffrey Wasteneys, Chair of the Scientific Program Organizing Committee for Plant Canada 2019
5:45 – 6:45pm	Keynote Address by Dan Riskin
6:45 – 7:30pm	Major Society Awards (presented by the Presidents of each Society)
7:30 – 10:00pm	*Plant Canada Welcoming Reception Mixer at the Atrium

*You are welcome to visit, relax or talk with others at the PC Welcoming Reception Mixer at the Summerlee Science Complex Atrium. Enjoy the sounds of Guitar player Juneyt Yetkiner and the sights of the Cellscapes exhibition.

PROGRAM SCHEDULE OVERVIEW FOR MONDAY JULY 8, 2019

8:00 am – 4:00 pm Registration in the Rozanski Concourse

time	POSTER VIEWING AND EXHIBITS AT PETER CLARK HALL (PCH) FROM 8:00am – 7:00pm								
8:00 – 8:30am	Coffee Break in concourse sponsored by Canadian Science Publishing								
Loading talks at 8am	**Plenary Session 1-Plant Biotechnology** Rozanski room 104 *Chairs: Rima Menassa & Abdelali Hannoufa (Agriculture and Agri-Food Canada)*								
8:30 – 9:20 **PS1**	**Dr. Maureen Hanson, Cornell University, NY** ***Improving photosynthesis in C3 plants***								
9:20 – 10:10 **PS2**	**Dr. Bing Yang, University of Missouri, MO** ***Genome editing enables disease resistance in rice***								
10:10 – 11:00 **PS3**	**Dr. Leslie Sieburth, University of Utah, UT** ***Beyond transcription factors: A degrading story of gene expression control***								
11:00 – 1:00	**LUNCH at Creelman Hall 11:00 am – 1:00 pm**								
11:15 – 11:50	**Workshop 2**: ***Careers Outside of Academia*** Rozanski r. 101								
11:15 – 12:15	**Workshop 3**: ***Towards developing a plant health science vision for Canada*** Rozanski r. 103								
12:00 – 12:50	**Workshop 4**: ***NSERC Seminar*** Rozanski r. 101								
11:15 – 1:00	**CAPB Annual General Meeting** Rozanski r. 105 *- lunch tickets*								
11:30 – 1:00	**CBA Section Meeting: Ecology** Rozanski r. 106 *- lunch tickets*								
11:30 – 1:00	**CBA Section Meeting: Systematics & Phytogeography** Rozanski r. 107 *- lunch tickets*								
11:30 – 1:00	**CBA Section Meeting: Development** Rozanski r. 108 *- lunch tickets*								
11:30 – 1:00	**CBA Section Meeting: Mycology** Rozanski r. 109 *- lunch tickets*								
Rooms→	101	102	103	104	105	106	107	108	109
Loading talks will be inside corresponding rooms at 1:00-1:15pm for CS1 and at 3:00-3:15pm for CS2									
Concurrent Session 1	**CSPB-I**	**CSA-I**	**CSPB-II**	**CSPB-III**	**CAPB-I**	**CBA-I**	**CSHS-I**	**CPS-I**	**CPS-II**
1:15 - 1:30	S1	S7	S12	S18	S23	S29	S35	S40	S45
1:30 - 1:45	S2		S13		S24	S30	S36	S41	S46
1:45 - 2:00	S3	S8	S14	S19	S25	S31		S42	S47
2:00 - 2:15	S4	S9	S15	S20	S26	S32	S37	S43	S48
2:15 - 2:30	S5	S10	S16	S21	S27	S33	S38	S44	S49
2:30 - 2:45	S6	S11	S17	S22	S28	S34	S39	Panel disc.	Panel disc.
2:45 - 3:15	Coffee Break in concourse sponsored by Conviron								
Concurrent Session 2	**CAPB-II**	**CSA-II**	**CSPB-IV**	**CSPB-V**	**CSA-III**	**CBA-II**	**CSHS-II**	**CPS-III**	**CPS-IV** **CSA-IV**
3:15 - 3:30	S50	S56	S62	S69	S75	S80	S86	S92	S97
3:30 - 3:45	S51	S57	S63	S70	S76	S81	S87	S93	S98
3:45 - 4:00	S52	S58	S64	S71	S77	S82	S88	S94	S99
4:00 - 4:15	S53	S59	S65	S72	S78	S83	S89	S95	S100
4:15 - 4:30	S54	S60	S66	S73	S79	S84	S90	S96	S101
4:30 - 4:45	S55	S61	S67	S74		S85	S91	Panel disc.	S102
4:45 – 5:00			S68						
5:00pm – 7:00pm	POSTER SESSION 1 (odd #'s) @ PCH Sponsored by **LI-COR Biosciences**								
5:30 – 7:30	PC President Reception @ University Center Club (invitation only)								
7:00 – 8:30	**CBA Workshop: Gender in Ecology** Rozanski r. 105								
7:00 – 9:00	CPS President Reception @ Delta Inn Hotel				CSPB Mixer @ Bullring -round bldg. (members only)				
8:30 – 10:30	**ALL SOCIETY Student Social** @ Grad Lounge-The Fifth at the Univ. Center in UofG								

PROGRAM SCHEDULE OVERVIEW FOR TUESDAY JULY 9, 2019

8:00 am – 4:00 pm Registration in the Rozanski Concourse

time	POSTER VIEWING AND EXHIBITS AT PETER CLARK HALL (PCH) FROM 8:00am – 7:00pm
8:00 – 8:30	Coffee Break in concourse sponsored by Western Grain Research Foundation
Loading talks at 8am	**Plenary Session 2-Agronomy** Rozanski room 104 *Chair: Helen Booker (University of Saskatchewan)*
8:30 – 9:20 **PS4**	**Dr. D. Brian Fowler, University of Saskatchewan, SK** ***Winter wheat production in the high winter stress climate of western Canada – An experiment in crop adaptation***
9:20 – 10:10 **PS5**	**Dr. Clarence J Swanton, University of Guelph** ***Plant competition and the physiology of fear***
10:10 – 11:00 **PS6**	**Dr. Jaswinder Singh, McGill University, QC** **CD Nelson Award Winner for 2018** ***New paradigms in the genetic regulation of pre- and post- harvest grain germination in cereals***
11:00 - 1:00	LUNCH at Creelman Hall 11:00 am – 1:00 pm / loading talks 12:30-1:00pm
11:15 – 12:15	**Workshop 5:** ***Beyond Grad School: A guide for PDF and PI positions*** Rozanski r. 101
12:15 – 1:00	**Workshop 6**: CAPB gene editing workshop Rozanski r. 102
11:15 – 1:00	**CPS Annual Business Meeting** Rozanski r. 103 - *lunch tickets*
11:30 – 12:30	**CSA Executive Meeting** Rozanski r. 107 - *lunch tickets*

Rooms→	101	102	103	104	105	106	107	108	109

Loading talks will be inside corresponding rooms at 1:00-1:15pm for CS3 and at 3:00-3:15pm for CS4

Concurrent Session 3	**CSPB-VI**	**CSPB-VII**	**CSPB -VIII**	**CPS-V** **CSPB-IX**	**CSHS-III**	**CBA-III**	**CSA-V** **CSPB-X**	**CPS-VI**	**CSPB-XI** **CWSS-I**
1:15 - 1:30	S103	S109	S115	S121	S127	S133	S139	S145	S150
1:30 - 1:45	S104	S110	S116	S122	S128	S134	S140	S146	S151
1:45 - 2:00	S105	S111	S117	S123	S129	S135	S141	S147	S152
2:00 - 2:15	S106	S112	S118	S124	S130	S136	S142	S148	S153
2:15 - 2:30	S107	S113	S119	S125	S131	S137	S143	S149	S154
2:30 - 2:45	S108	S114	S120	S126	S132	S138	S144	Panel disc.*	S155
2:45 - 3:15	Coffee Break in concourse sponsored by Biochambers Incorporated								MACN r.113
Concurrent Session 4	**CSPB -XII**	**CSHS-IV**	**CSHS-V** **CPS- VII**	**CSPB-XIII** **CPS-VIII** **CAPB-III**	**CSA-VI**	**CBA-IV**	**CBA-V**	**CPS-IX**	**CSPB -XIV**	**CSPB - XV**
3:15 - 3:30	S156	S162	S168	S172	S178	S183	S190	S196	S201	S207
3:30 - 3:45	S157	S163		S173	S179	S184	S191	S197	S202	S208
3:45 - 4:00	S158	S164	S169	S174	S180	S185	S192	S198	S203	S209
4:00 - 4:15	S159	S165	S170	S175	S181	S186	S193	S199	S204	S210
4:15 - 4:30	S160	S166		S176	S182	S187	S194	S200	S205	S211
4:30 - 4:45	S161	S167	S171	S177		S188	S195	Panel disc.*	S206	S212
4:45 - 5:00						S189				
5:00pm – 7:00pm	POSTER SESSION 2 (even #'s) @ PCH Sponsored by **Hoskin Scientific**									
7:00 – 11:00	CPS Awards Dinner and 90th Celebration @ Delta Hotel, Royal Ballroom A 7:00pm – 11:00pm									

PROGRAM SCHEDULE OVERVIEW FOR WEDNESDAY JULY 10, 2019

8:00 am until noon Registration in the Rozanski Concourse

time	POSTER VIEWING AND EXHIBITS AT PCH FROM 8:00am – 11:00 am	
8:00 – 8:30	Coffee Break in concourse sponsored by BASF	
Loading talks at 8am	**Plenary Session 3-Managing Plant Disease in Horticulture** Rozanski room 104 *Chairs:* Lone Buchwaldt (Agriculture and Agri-Food Canada) and Valerie Gravel (McGill University)	
8:30 – 9:20 **PS7**	**Dr. Mary Ruth McDonald, University of Guelph, ON** ***Billions, trillions and quadrillions: The challenge of managing clubroot on canola and vegetables***	
9:20 – 10:10 **PS8**	**Dr. Richard Bélanger, Université Laval, Québec, QC** ***A unique interaction with a biocontrol agent alters the parasitic activity of powdery mildews on plants***	
10:10 – 11:00 **PS9**	**Dr. Diane G.O. Saunders, John Innes Centre, UK** ***The wheat-rust conflict: Shifty enemies and the long reach of genomics***	
Before Noon	Please pick-up posters @ Peter Clark Hall	
11:00 - 1:30	LUNCH at Creelman Hall 11:00 am – 1:30 pm / loading talks 1:00-1:30pm	
11:15 – 1:15	**CSHS Annual Business Meeting**	Rozanski r. 106 - *lunch tickets*
11:15 – 1:30	**CSPB Annual Business Meeting**	Rozanski r. 103 - *lunch tickets*
11:30 – 1:30	**CBA Annual General Meeting and Awards**	Rozanski r. 102 - *lunch tickets*
11:30 – 1:00	**CSA Annual General Meeting and Awards**	Rozanski r. 104 - *lunch tickets*
11:30 – 12:30	**CAPB Award Deliberations**	Rozanski r. 105 - *lunch tickets*
12:30 – 1:30	**CAPB Student Presentation Awards**	Rozanski r. 105
5:30 – 6:30	**Plant Canada Incoming Board**	Rozanski r. 106
Loading talks at 1pm	**Plenary Session 4-Root Evolution, Development and Function** Rozanski room 104 *Chair: Geoffrey Wasteneys (University of British Columbia)*	
1:30- 2:20 **PS10**	**Dr. Liam Dolan, University of Oxford, UK** ***Evolution and development of the earliest land plant rooting systems***	
2:20 – 3:10 **PS11**	**Dr. Siobhan Brady, UC Davis, CA** ***Regulation of root development – a systems biology perspective***	
3:10 – 3:40	Coffee Break in concourse sponsored by Regent Instruments Inc	
3:40 – 4:30 **PS12**	**Dr. William Plaxton, Queen's University, Kingston, ON** ***Feeding hungry plants: purple acid phosphatases play a pivotal role in phosphorus nutrition***	
4:30 – 5:00pm	AWARDS CEREMONY and CLOSING REMARKS	
7:00 – 11:00pm	ALL SOCIETY FINAL BANQUET DINNER AND STARPOWER ENTERTAINMENT	

*** Panel disc.** A Panel discussion will follow after all speakers' presentations in the applicable room.

Keynote Speaker

Effective science communication requires listening to what your audience wants

Sunday, July 7th @ 5:30pm

Rozanski Hall, room 104

University of Guelph, ON

There are many incentives for scientists to communicate their work to people outside their own field. It can help new ideas spread across disciplines, help scientists advocate for funding, and help build public trust and support for science itself. Plant scientists do some of the most important work in the world today, connected with basic issues such as food security, sustainability, and human adaptation to climate change. But despite the importance of their fields, plant scientists often have a difficult time wrestling public attention away from stories in other scientific disciplines, including zoology, medicine, and space science. In this keynote, I'll talk about my experience working in science communication, and offer some informed suggestions about how to get the attention of news journalists, or people in other popular media. Ultimately, I will argue that audiences are most interested in the big, unsolved questions that scientists go after, and that focusing on those, along with stories of human experience, can make science communication more effective than simply focusing on the discoveries we've most recently made.

Dan Riskin, PhD, is a scientist, author, and television personality. He is best known in Canada for his seven-year tenure as the co-host of Discovery's flagship Science Program, *Daily Planet*. In the US and elsewhere, he is recognized as the host of Animal Planet's hugely successful show about parasites, *Monsters Inside Me*. Dan has published more than 20 papers in scientific journals, including *Nature*, mostly about the biomechanics of bats. To make science accessible and interesting to wide audiences, Dan has appeared as a guest on *The Tonight Show with Jay Leno*, *The Late Late Show with Craig Ferguson*, *The Dr. Oz Show*, *The Doctors*, *CNN Tonight with Don Lemon*, *CBS This Morning*, *The CTV National News with Lisa LaFlamme*, Global's *Morning Show*, CTV NewsChannel, and CP24. His first popular book, *Mother Nature is Trying to Kill You* was a Canadian bestseller.

SCHEDULE OF PLENARY SPEAKERS FOR PLANT CANADA 2019

Time	Monday July 8th	Tuesday July 9th	Wednesday July 10th
Place	**Room: Rozanski 104**	**Room: Rozanski 104**	**Room: Rozanski 104**
8-8:30	Coffee-break (concourse)	Coffee-break (concourse)	Coffee-break (concourse)
Session	Plant Biotechnology	Agronomy	Managing Plant Disease in Horticulture
Chairs	Dr. Rima Menassa & Dr. Abdelali Hannoufa	Dr. Helen Booker	Dr. Lone Buchwaldt & Dr. Valerie Gravel
8:30am	**Dr. Maureen Hanson** Cornell University, NY *Improving photosynthesis in C3 plants*	**Dr. D. Brian Fowler** University of Saskatchewan, SK *Winter wheat production in the high winter stress climate of western Canada* *– An experiment in crop adaptation*	**Dr. Mary Ruth McDonald** University of Guelph, ON *Billions, trillions and quadrillions: The challenge of managing clubroot on canola and vegetables*
9:20am	**Dr. Bing Yang** University of Missouri, MO *Genome editing enables disease resistance in rice*	**Dr. Clarence J Swanton** University of Guelph, ON *Plant competition and the physiology of fear*	**Dr. Richard Bélanger** Université Laval, Québec, QC *A unique interaction with a biocontrol agent alters the parasitic activity of powdery mildews on plants*
10:10am	**Dr. Leslie Sieburth** University of Utah, UT *Beyond transcription factors: A degrading story of gene expression control*	**Dr. Jaswinder Singh** McGill University, QC *CSPB C.D. Nelson Award Address: New paradigms in the genetic regulation of pre- and post- harvest grain germination in cereals*	**Dr. Diane G.O. Saunders** John Innes Centre, UK *The wheat-rust conflict: Shifty enemies and the long reach of genomics*
11:00am	Lunch at Creelman Hall	Lunch at Creelman Hall	Lunch at Creelman Hall
Session	**Schedule of Plenary Talks at Plant Canada 2019**		Root evolution, Development and Function
Chairs			Dr. Geoffrey Wasteneys
1:30 pm			**Dr. Liam Dolan** University of Oxford, UK *Evolution and development of the earliest land plant rooting systems*
2:20 pm			**Dr. Siobhan Brady** U of California-Davis, CA *Systems biology of root development*
3:10 pm			Coffee-break (concourse)
3:40 pm			**Dr. William Plaxton** Queen's University, Kingston, ON *CSPB Gold Medal Address: Feeding hungry plants: purple acid phosphatases play a pivotal role in phosphorous nutrition*
4:30 pm			CLOSING REMARKS

PLENARY SPEAKERS FOR PLANT CANADA 2019

ALL PLENARY TALKS WILL BE IN ROZANSKI HALL room 104

Dr. Richard Bélanger **Université Laval, QC**	PS8	A unique interaction with a biocontrol agent alters the parasitic activity of powdery mildews on plants
Dr. Siobhan Brady **UC Davis, CA**	PS11	Systems biology of root development
Dr. Liam Dolan **University of Oxford, UK**	PS10	Evolution and development of the earliest land plant rooting systems
Dr. Brian Fowler **University of Saskatchewan, SK**	PS4	Winter wheat production in the high winter stress climate of western Canada – An experiment in crop adaptation
Dr. Maureen Hanson **Cornell University, NY**	PS1	Improving photosynthesis in C3 plants
Dr. Mary Ruth MacDonald **University of Guelph, ON**	PS7	Billions, trillions and quadrillions: The challenge of managing clubroot on canola and vegetables
Dr. William Plaxton **Queen's University, ON**	PS12	CSPB Gold Medal Address-Feeding hungry plants: Purple acid phosphatases play a pivotal role in phosphorous nutrition
Dr. Diane G.O. Saunders **Norwich Research Park, UK**	PS9	The wheat-rust conflict: Shifty enemies and the long reach of genomics
Dr. Leslie Sieburth **University of Utah, UT**	PS3	Beyond transcription factors: A degrading story of gene expression control
Dr. Jaswinder Singh **McGill University, QC**	PS6	CSPB C.D. Nelson Award Address-New paradigms in the genetic regulation of pre- and post-harvest grain germination in cereals
Dr. Clarence Swanton **University of Guelph, ON**	PS5	Plant competition and the physiology of fear
Dr. Bing Yang **University of Missouri, MO**	PS2	Genome editing enables disease resistance in rice

PS1. Monday, July 8, morning session at 8:30 am

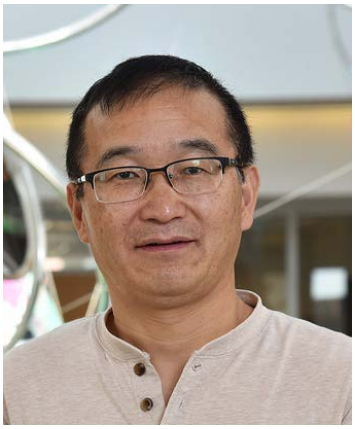
Dr. Maureen Hanson and Myat T. Lin
Cornell University, NY

Improving photosynthesis in C3 plants

Abstract: Rubisco, which catalyzes the first step in carbon fixation, is a target for efforts to improve photosynthetic efficiency. Modifying the cellular environment surrounding Rubisco to enhance the CO_2 concentration, in order to prevent photorespiration, is one strategy underway in our lab. Another strategy is to alter the properties of Rubisco itself to increase its enzymatic efficiency and/or to increase its affinity for CO_2. Manajit Hayer-Hartl's group recently demonstrated assembly of active Rubisco in *E. coli*, where the effects of mutagenesis can be quickly examined. Assembly of Rubisco requires multiple chaperones: Cpn60α, Cpn60β and Cpn20, as well as RbcX, Raf1, Raf2 and BSD2, for assembly of large and small subunits into L_8S_8 holoenzymes. We modified Hayer-Hartl's Arabidopsis vectors to express tobacco Rubisco by replacing the Arabidopsis assembly factor genes with tobacco ones. We used this system to survey the activity of enzymes comprised of individual members of the tobacco Rubisco small subunit family, by co-expressing each one with the single large subunit gene in *E. coli*. These novel *E. coli*-expressed Rubisco enzymes have carboxylation kinetics very similar to that of the native tobacco Rubisco. We also produced tobacco Rubisco with a recently discovered trichome small subunit in *E. coli* and found that it has a higher catalytic rate and a lower CO_2 affinity compared to the enzymes with other small subunits.

Bio:

Dr. Maureen Hanson is Liberty Hyde Bailey Professor in the Department of Molecular Biology and Genetics at Cornell University in Ithaca, NY. She previously was on the Biology faculty at the University of Virginia, Charlottesville. She holds a Ph.D. in Cell and Developmental Biology from Harvard University, where she subsequently held an NIH NRSA postdoctoral fellowship. She is a Fellow and recipient of the Lawrence Bogorad Award of the American Society of Plant Biologists and a Fellow of the American Association for the Advancement of Science. She received the SUNY Chancellor's Award for Faculty Service and the Cornell Award for Outstanding Accomplishments in Basic Research. Her lab is known for identifying the first single dominant fertility restorer (*Rf*) gene that suppresses the expression of a toxic mitochondrial gene encoding cytoplasmic male sterility, the rediscovery of stromules and the demonstration that molecules pass through them between chloroplasts, and identification of several gene families previously unknown to comprise plant organelle RNA editing machinery. Her group has ongoing projects concerning improving photosynthetic efficiency through synthesizing the cyanobacterial carbon-concentrating mechanism in chloroplasts or through engineering of the carbon-fixing enzyme Rubisco. https://hansonlab.org/



PS2. Monday, July 8, morning session at 9:20 am

Dr. Bing Yang
University of Missouri, USA

Genome editing enables disease resistance in rice

Abstract: Engineered CRISPR (clustered regularly interspaced short palindromic repeats) systems have emerged as potent biotechnological tools for both basic and applied research. The most promising utilization of CRISPR/Cas9 is for targeted genome editing, leading to precise genetic alterations within any genome of interest, as demonstrated in a plethora of organisms including several important crop plants. Bacterial blight is an important disease of rice in Asia and Africa. The causal agent *Xanthomonas oryzae* pv. *oryzae* (Xoo) uses secreted TAL effectors (TALes) to ectopically activate host SWEET sucrose transporter genes, enabling disease. *Xoo* uses a limited set of TALes to target promoters of three SWEET (*SWEET11*, 1*3*, and *14*) genes in rice. Naturally occurring variant *SWEET* genes act as recessive resistance genes by interfering with TALe targeting. We used CRISPR/Cas9 to engineer rice lines that carry multiple mutations in three *SWEET* gene promoters. The *SWEET* promoter mutations were introduced into different rice varieties, and the disease evaluation showed that editing SWEET promoters generated robust, broad-spectrum BB resistance. We also created rice lines that carry knockout mutations individually or in combination in three SWEET (*SWEET11*, *13*, and *14*) genes. The knockout lines are useful diagnostic tools to determine SWEET-inducing TALes in field Xoo isolates and guide the deployment of resistance genes derived from the naturally occurring or genome edited SWEET promoter mutations.

Bio:

Dr. Bing Yang is professor in the Division of Plant Sciences at the University of Missouri – Columbia and member at Donald Danforth Plant Science Center. He received PhD degree in plant pathology at Kansas State University in 2000, joined Iowa State University as an assistant professor in 2007, and moved to the University of Missouri – Columbia and Danforth Plant Science Center in 2018.

Yang works on development and application of TALEN- and CRISPR-based genome editing technologies in crops such as rice, maize, wheat, sorghum and soybean. His research also focuses on basic understanding of host susceptibility/resistance to bacterial infection and using genome editing tools to engineer disease resistance in crop plants.

https://cafnr.missouri.edu/person/bing-yang/

https://www.danforthcenter.org/scientists-research/principal-investigators/bing-yang

PS3. Monday, July 8, morning session at 10:10 am

Dr. Leslie Sieburth
University of Utah, USA

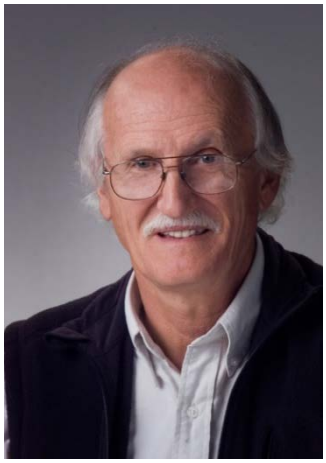
Beyond transcription factors: A degrading story of gene expression control

Abstract: Gene expression is a common component of many studies, and typically is quantified as mRNA abundance. mRNA abundances, however, are controlled by both rates of synthesis (transcription) and rates of decay, and yet roles of mRNA decay in regulating RNA abundances are largely unknown. To address this problem, my lab uses genetic and genomic approaches to identify mRNA substrates of the decay pathways in Arabidopsis. Mutants are used to link mRNA substrates with decay pathways, and our work focuses on *varicose* (*vcs*), which is required for the mRNA decapping step that initiates 5'-->3' decay, and *suppressor of varicose* (*sov*), which encodes a 3'-->5' exoribonuclease. The *vcs* mutant was initially identified because its phenotype includes thick and misshapen veins, especially in cotyledons and leaves. By contrast, the *sov* mutant has no obvious developmental defects. Genome-wide measurements of mRNA decay revealed that mRNA decapping carries out a majority of the fast-decaying mRNAs, and the fast-decaying mRNAs include those encoding transcription factors, components of signal transduction pathways, and genes annotated as responding to stress or developmental signals. Analysis of mRNA substrates of *sov*, by contrast, led to identification of an mRNA decay feedback pathway. In *sov* mutants, an over-compensating feedback mechanism reorganizes patterns of mRNA decay, decay rates, and also affects transcription. The profoundly altered gene expression dynamics in *sov* mutants maintains mRNA abundance at near wild-type levels. The implications of mRNA decay rates and feedback pathways for regulation of gene expression will be discussed.

Bio:

Dr. Leslie Sieburth is a Professor and the Associate Director of the School of Biological Sciences at the University of Utah. Dr. Sieburth's research uses genetic, genomic, and cell biological approaches to dissect fundamental processes in plants. A major project focuses on gene expression, and regulatory roles of mRNA decay in controlling mRNA abundance. Her lab was the first to identify VARICOSE (VCS), a scaffold protein that is essential for functional assembly of the mRNA decapping complex, and also discovered *SUPPRESSOR OF VARICOSE (SOV)*, another cytoplasmic mRNA decay pathway. Recent studies using genome-wide approaches identified the mRNA substrates of mRNA decapping and SOV, which also revealed overcompensating feedback pathways in mRNA decay mutants. A second project examines root-to-shoot signaling, and identified the *BYPASS1* gene as encoding a negative regulator of a root-derived signaling molecule that causes strong physiological and developmental responses in the shoot. This pathway appears to coordinate shoot physiology with perception of rhizosphere conditions, and because *BYPASS1*-like genes are present in genomes of all land plants, this work suggests that inter-organ communication mediated by BPS1 was vital as plants colonized land. Leslie began her independent academic career in the Biology Department at McGill University.

https://faculty.utah.edu/u0143322-LESLIE_E_SIEBURTH/research/index.hml



PS4. Tuesday, July 9, morning session at 8:30 am

Dr. Brian Fowler
University of Saskatchewan, Saskatoon, SK

Winter wheat production in the high winter stress climate of western Canada – An experiment in crop adaptation.

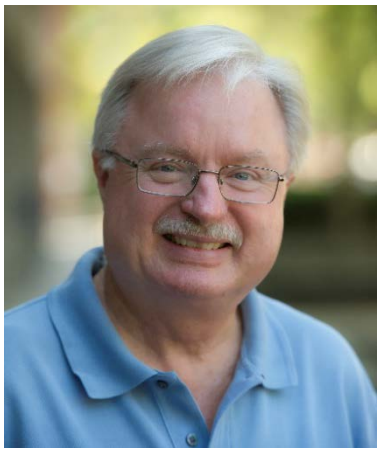
Abstract: The winter wheat production area on the North American Great Plains only extended as far north as southern Alberta in the 1970's. At that time, a research and development program was initiated with the objective of expanding production north and east into higher winter stress areas of the Canadian prairies. Winter survival was considered the main limitation in this region while market access, diseases and agronomic problems also restricted its acceptance as a viable cropping option. Intensive plant breeding efforts to increase cultivar winter hardiness were unsuccessful. However, research and development work started in the 1970's demonstrated that no-till seeding into standing stubble for snow trapping could successfully overwinter winter wheat if available cold hardy cultivars were grown using recommended management practices. Subsequent plant breeding improvements increased yield potential, straw strength, and rust resistance and winter wheat became one of the most environmentally sustainable cropping options. Commercial grain yield ranged from 125 to 149% of spring wheat and production increased to a high of 1.2 million ha in 2007 in Saskatchewan and Manitoba. In light of recent environmental concerns, changing weather patterns, diminishing world wheat reserves, and an ever increasing global population to feed, one would assume that winter wheat production in western Canada would continue to expand. However, marketing obstacles and difficulties inserting winter wheat into spring crop rotations, both of which have a direct influence on farmers' net returns, remain to be overcome before the full potential of this cropping option will be realized.

Bio:

Brian Fowler is a Professor in the Department of Plant Sciences at the University of Saskatchewan where his primary responsibilities have been in the areas of winter wheat plant breeding, genetics, drought, and mineral stresses, with special emphasis on cold hardiness and conservation farming systems. He has been a leader in winter cereal variety development and no-till research in the Great Plains region of North America. These efforts involved close co-operation with farmer and environmental groups that has been recognized by awards from the Manitoba-North Dakota Zero Tillage Farmers Association, the Saskatchewan Soil Conservation Association, the Alberta and Saskatchewan Winter Wheat Commissions and Winter Cereals Manitoba. In 2011, he was presented a Ducks Unlimited North American Recognition Award "for his passion of preserving the natural landscape across Canada". He was made a Fellow of both the Canadian and American Societies of Agronomy in recognition of his "significant contributions to the development of winter cereal production and conservation farming systems on the Canadian Prairies and the Northern Great Plains". In 2018, he was inducted into the Saskatchewan Agriculture Hall of Fame.

https://www.researchgate.net/profile/David_Fowler6;

https://www.wheatworkers.ca/wcsm.php



PS5. Tuesday, July 9, morning session at 9:20 am

Dr. Clarence J. Swanton, N. Berardi and S. Amirsadeghi
University of Guelph, ON

Plant Competition and the Physiology of Fear

Abstract: Plant competition is recognised as one of the most important biological interactions that influences plant community structure and individual plant fitness. The competitive interactions for limited resources of light, water and nutrients are thought to be the primary mechanisms by which plants are harmed. This presentation will explore an alternative view, a view that suggests that the primary mechanism of plant competition is the creation of a cellular imbalance. Experimental evidence will be presented to show that under resource independent competition, far red enriched light reflected from neighbouring weedy plants can alter the balance between the production of reactive oxygen species and the plant's ability to detoxify through antioxidant defence mechanisms. Specifically, the determination of singlet oxygen involvement in early responses of crop plants to neighbouring weeds changes everything that we know about plant competition. It also provides a unique opportunity to compare physiological responses of mammals and plants to competition, hence the "physiology of fear".

Bio:

Dr. Swanton obtained his BSc in Botany from the University of Toronto, His MSc in Agrometerology from the University of Guelph, and a PhD in Plant Ecology from the University of Western Ontario. During the years between earning his MSc and his PhD, he was employed as a field agronomist with the Campbell Soup Company of Canada and later as a weed biologist with the Ontario Ministry of Agriculture and Food. In 1985 he joined the University of Guelph as a faculty member in the Department of Crop Science. In 1996 he was promoted to full professor. From 1998 to 2004, Clarence served as the first Chair of the Department of Plant Agriculture which included the Departments of Crop Science, Horticulture and the Horticulture Research Institute of Ontario. From 2007 to 2008 he served as President of the Canadian Weed Science Society. He has won numerous awards for his research. In 2013 he received the Outstanding Canadian Award in the area of Crop Protection from Bayer CropScience for exceptional contributions to science and innovation. His research is focused on weed ecology and the development of integrated weed management systems for field and horticultural crops. https://www.plant.uoguelph.ca/cswanton

PS6. Tuesday, July 9, morning session at 10:10 am

Dr. Jaswinder Singh
McGill University, Montreal, QC

CSPB C.D. Nelson Award Address:

New paradigms in the genetic regulation of pre- and post-harvest grain germination in cereals

Abstract: In small grain cereals, it is an important goal to breed for the right balance of resistance to pre-harvest sprouting on one hand and reduced seed dormancy for rapid and uniform germination on the other, especially in many post-harvest processes. The antagonistic action of gibberellin and abscisic acid has been intensively investigated in recent years leading to an improved understanding of mechanisms underlying seed dormancy/germination. There is also emerging evidence for role of epigenetic mechanisms in seed dormancy which could be an alternate hormone independent genetic mechanism for seed dormancy. A key gene of RdDM pathway, *ARGONAUTE4_9* has been found to be associated with pre-harvest sprouting in barley and wheat. Significant variation in the expression of *AGO4_9* class genes in dormant and non-dormant barley and wheat genotypes was observed. Post-harvest seed germination commences after imbibition of dry seed activating many metabolic activities involving different carbohydrate reserves. During this process, we identified a specific Thaumatin- Like Protein, TLP8 which regulates the amount of β-glucan in germinating barley grains. β-glucan is one of the major bioactive components of endosperm cell walls for dietary fibers, excessive amount of which causes major hindrance during the malting process. Currently, we are employing CRISPR-based gene editing approaches to understand novel biological network during pre- and post-germination in barley. Overall, our efforts shed new light on the genetics of pre-harvest sprouting and on the protein-carbohaydrate interaction during post-harvest germination, which could be potentially valuable for the development of future generation of healthy, and productive cereals.

Bio:

Dr. Jaswinder Singh is currently an Associate Professor in the Department of Plant Science, McGill University, Canada. After completing his PhD from CSIRO Plant Industry, Canberra Australia, he did his postdoctoral studies at the University of California Berkeley. His research focuses on the enhancement of quality traits, and stress tolerance in crop plants using functional genomics tools. His laboratory is actively researching precocious germination from a unique perspective. His group has recently discovered a novel barley gene, which regulates the β-glucan activity during germination. His findings have shown for the first time the reversal of epigenetic silencing in plants. He has published over 50 research articles and delivered over 50 invited talks in international meetings and renowned academic institutes. He served in various executive positions in different plant science societies, notably as Eastern Director of Canadian Society of Agronomy (2010-12), International Committee member of the American Society of Plant Biologists (2012-15), is the current President of the Canadian Society of Agronomy and a Board Member, Plant Canada. The Canadian Society of Plant Biologists recognized his research with prestigious C. D. Nelson award in 2018 for his outstanding contribution to plant science. https://www.mcgill.ca/plant/faculty/singh

PS7. Wednesday, July 10, morning session at 8:30 am

Dr. Mary Ruth McDonald and Bruce D. Gossen
University of Guelph, ON; AAFC-Saskatoon

Billions, trillions and quadrillions: The challenge of managing clubroot on canola and Brassica vegetables

Abstract: Clubroot, caused by *Plasmodiophora brassicae* Wor., is a problem wherev er brassica crops are grown. The pathogen produces enormous numbers of long-lived resting spores, so keeping resting spore numbers low is key to effective clubroot management. One infected canola plant can produce 5 to 23 billion resting spores, and concentrations of 10^6 to 10^9 resting spores per gram of soil are common. Host resistance is often effective but not durable because intense selection for virulent pathotypes occurs on quadrillions of spores in each heavily infested field. As a result, there is renewed interest in physical and cultural controls to reduce disease pressure and protect genetic resistance. This has led to some unexpected findings. For example, a 2-year break from canola reduced spore numbers in soil by 99%, but this still left enough spores to cause 100% disease in a susceptible host. Also, spore survival was consistent with a Type III survival curve; spores that survive the initial two years can live a very long time. Other studies showed that no symptoms developed in infected plants at temperatures below 12 °C, so planting time can play a role in disease avoidance, especially for vegetable crops. Increasing soil pH to 7.2 or above can reduce severity, but is not fool-proof when temperature and soil moisture are optimum. Application of lime, calcium cyanamide, boron, solarisation or even fumigation can supress clubroot. One or more of these soil treatments can be combined with grass cover crops to manage small patches of clubroot in canola fields.

Bio:

Mary Ruth McDonald is a professor in the Department of Plant Agriculture, University of Guelph and she is also a Research Program Director at the university. Her research focuses on plant diseases, pathogen biology and integrated pest management for vegetable crops and canola, and also some aspects of sustainable vegetable production and adaptation to climate change. Mary Ruth teaches portions of undergraduate agriculture course and a graduate course on plant disease epidemiology. Prof. McDonald has published over 70 peer reviewed papers and has been an invited keynote speaker at regional, national and international conferences, including recent presentations in the U.K., Sweden and Mexico. She is the recipient of local, national and international awards for excellence in research, extension education, and integrated pest management. https://www.plant.uoguelph.ca/mrmcdona

PS8. Wednesday, July 10, morning session at 9:20 am

Dr. Richard R. Bélanger
Université Laval, Québec, QC

A unique interaction with a biocontrol agent alters the parasitic activity of powdery mildews on plants

Abstract: The phyllosphere harbors a diverse microbial community in which fungi occupy a predominant space. In the course of evolution, all leaf surface fungi have acquired specific properties that enable them to compete and survive in this restricted ecological niche in spite of the apparent limited resources on the leaf. While we, as scientists, have been trying to ascribe a certain hierarchy among the fungi inhabiting the phylloplane, it is nonetheless important to remember that in a balanced environment, each of these fungi manages successfully to acquire the resources necessary for its establishment and reproduction on the leaf surface. For instance, recent observations have highlighted that closely related organisms co-habit in this environment with albeit quite different lifestyles. Among them, the Ustilaginaceae, including the genera *Ustilago* and *Pseudozyma*, comprise members that can be plant pathogens, biocontrol agents, or simple epiphytes. Comparative genomic analyses among different members of the Ustilaginaceae have revealed that these opposite lifestyles in similar environments are seemingly associated with the presence/absence of a very limited number of genes coding mostly for effector proteins. In the same manner, the members lacking the effector proteins to be a plant pathogen, for example, seem to have acquired specific features, including their own unique set of effectors, to adopt a different lifestyle. These complex and subtle evolutive processes appear to play key roles in the adaption of fungi occupying specific ecological niches, and in their ability to extract resources necessary for their survival in a given environment.

Bio:

Dr. Richard Bélanger is full professor in plant pathology and holder of a Canada Research Chair in plant protection at Laval University. His research endeavors concentrate on the development of biological and non-chemical approaches to control plant diseases. Along those lines, sustained efforts have been devoted toward biological control of powdery mildews with natural antagonists. Belanger's lab has pioneered the exploitation of the fungus *Pseudozyma flocculosa* and its unique properties to attack powdery mildews. This research has led the way to the development of a commercial product and to the elucidation of an unusual tritrophic interaction where the plant, the pathogen and the biocontrol fungus each contributes coordinated factors leading to the collapse of the pathogen.

Département de phytologie, Université Laval

2425, rue de l'Agriculture, Québec, Qc, G1V0A6, Canada

Richard.Belanger@fsaa.ulaval.ca

PS9. Wednesday, July 10, morning session at 10:10 am

Dr. Diane G. O. Saunders
John Innes Centre, Norwich Research Park, UK

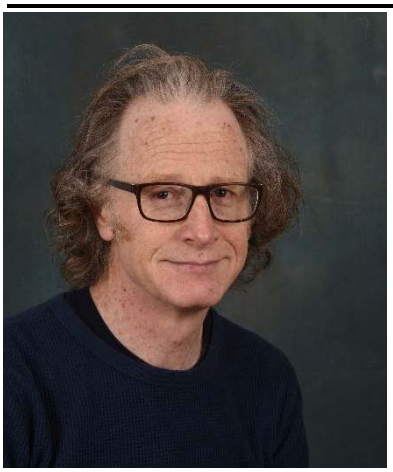
The wheat-rust conflict:

Shifty enemies and the long reach of genomics

Abstract: Wheat rusts have been associated with crop failures and famine throughout history. Recent outbreaks of yellow (stripe) and stem rust in Europe have been linked to expansions in pathogen geographic distribution, exotic incursions and increased virulence. Our rapid "field pathogenomics" strategy, that uses transcriptome sequencing of infected wheat leaves taken directly from the field, has enabled us to gain insight into the population structure of the yellow rust pathogen over successive seasons and track the recent re-emergence of wheat stem rust in western Europe. Whilst effectively capturing pathogen diversity, transcriptome sequencing of infected host tissue can also be leveraged to assess the genotype and expression profiles of the host in its natural environment. Through analysis from the host side of the interaction we also identified changes in the expression of primary metabolic pathways including photosynthesis through comparative differential gene expression analysis of wheat varieties with differing levels of susceptibility. Analysis of independent wheat mutants for several of these genes has shown that they play a key function in enabling disease progression, with mutants displaying a severe reduction in disease symptoms. Developing and applying a genomics-driven approach to pathogen surveillance, we have generated valuable new knowledge on both the pathogen and host sides of the interaction that could be extremely useful for disease management.

Bio:

Dr. Diane Saunders is a Project Leader at the John Innes Centre, Norwich Research Park, Norwich, UK. Dr.Saunders received her BSc from Exeter University where she continued her PhD in the laboratory of Prof. Nick Talbot studying the genetic mechanisms that regulate plant pathogen development. After receiving her PhD in 2009, she joined Prof. Sophien Kamoun's group at The Sainsbury laboratory to continue to study the molecular mechanisms that underpin plant-pathogen interactions. In 2014, Diane became a computational biology fellow at the JIC and Earlham Institute, and moved to a Project Leader in 2017. Diane's research focuses on (re-)emerging plant pathogens that pose a significant threat to agriculture, and particularly wheat rust pathogens that are known as the "polio of agriculture". She uses an array of approaches to improve our understanding of how plant pathogens cause disease. To gain insight into the population dynamics of the wheat rust pathogens, Diane pioneered a revolutionary genomics-based pathogen surveillance technique called "field pathogenomics" to generate high-resolution data directly from infected field samples. This information is essential to help breeders to develop wheat varieties that are resistant to the wider range of yellow rust isolates that they now find in the field. https://www.jic.ac.uk/people/diane-saunders/



PS10. Wednesday, July 10, afternoon session at 1:30 pm

Dr. Liam Dolan
University of Oxford, UK

Evolution and development of the earliest land plant rooting systems

Abstract: The evolution of the first rooting systems some time before 400 million years was a key innovation that occurred when the first complex multicellular eukaryotic photosynthetic organisms – plants – colonized the land. The rooting systems of the earliest diverging group of extant land plants comprised unicellular tip-growing filaments called rhizoids and are morphologically similar to cells that develop at the interface between the plant and the soil in vascular plants – root hairs. Subsequently specialized axes – multicellular structures that develop from self-renewing populations of cells called meristems – with evolved that carry out rooting function. A major aim of our research is to use fossils and genes to understand key events in the evolution of land plant rooting systems. Fossils demonstrate the variety of forms that existed and how these forms developed. We have identified the oldest rooting structures with meristems. Genetics has allowed us to define the regulatory mechanisms that controlled the development of the first land plant root system and demonstrate how these mechanisms changed during the course of evolution. This positive regulatory mechanism is preserved in most land extant plant lineages. By contrast, negative regulatory components of the mechanism evolved independently in different lineages and some are more than 300 million years old. By combining evidence from paleontology, genetics and development we can construct a picture for the evolution of rooting systems in the 100 million years after plants colonized the land and radiated across the continental surfaces.

Bio:

Liam Dolan graduated with a degree in Botany at University College, Dublin. He carried out PhD research on plant developmental genetics in cotton and Arabidopsis at the University of Pennsylvania with Scott Poethig and a post doc with Keith Roberts at the John Innes Centre in Norwich. After 13 years running his own research group at the John Innes Centre, he moved to the University of Oxford as the Sherardian Professor of Botany in 2009. He was Head of the Department of Plant Sciences between 2012 and 2017.

His research uses fossils and genes to understand how roots develop and evolved in the 470-500 million years since plants colonized the land. Fossils reveal the structure of ancient rooting systems. Genetics identifies developmental mechanisms controlling cellular development of rooting structures. Comparative developmental genetics illustrates how these mechanisms evolved in the course of plant evolution. A major discovery was the demonstration that the same genetic mechanism controlled the development of the simple rooting structures on the first land plants and the development of root hairs on the surface of extant vascular plant roots. https://www.plants.ox.ac.uk/people/liam-dolan

PS11. Wednesday, July 10, afternoon session at 2:20 pm

Dr. Siobhan Brady
University of California-Davis, USA

Systems biology of root development

Abstract: The plant vascular system supports the transport of water and nutrients throughout the plant body. Xylem cells contained within this tissue allow for long distance transport from the plant root to the shoot. Although the majority of plant cells are totipotent, xylem cells are unusual in that they undergo terminal differentiation. While the genes regulating this process are well characterized, much less is known regarding the dynamic behavior underlying the transition to xylem cell differentiation.

I will highlight the use of high-throughput yeast one hybrid network mapping, automated phenotyping, mining of publically available gene expression data and single cell sequencing approaches. Collectively, these approaches have led to the identification of double the number of transcription factors and novel modes of regulation involved in nitrogen metabolic regulation, and a bistable switch that underlies xylem cell differentiation.

Nitrogen is essential for plant growth. Insufficient nitrogen leads to decreased agricultural yield while nitrogen application from fertilizers results in increased plant productivity but can have a negative impact on the environment. Changes in nitrogen availability are perceived by dual function nitrate transporters in the root resulting in a signaling cascade and subsequent changes in gene expression. Despite the importance of transcriptional regulation in this adaptive response, a minimal number of nitrogen metabolic transcriptional regulators have been identified.

Bio:

Siobhan Brady received her PhD at the University of Toronto in 2005, and she was a Natural Sciences and Engineering Research Council of Canada Postdoctoral Fellow at Duke University from 2005 – 2008. In 2009 she began an Assistant Professor Position and became an Associate Professor in 2015 at the University of California, Davis in the Department of Plant Biology and in the Genome Center. In 2016, she was named as a Howard Hughes Medical Institute Faculty Research Scholar. Research in the Brady lab focuses on the global regulation of gene expression and its contribution to root morphology and development in Arabidopsis thaliana, Solanum species, Sorghum bicolor and maize.

Homepage: http://www-plb.ucdavis.edu/labs/brady/

Linkedin: http://www.linkedin.com/pub/siobhan-brady/33/b42/71a/

Twitter: @bradylabs

PS12. Wednesday, July 10, afternoon session at 3:40 pm

Dr. William Plaxton
Queen's University, Kingston, ON

CSPB Gold Medal Address:
Feeding hungry plants: Purple acid phosphatases play a pivotal role in phosphorous nutrition

Abstract: Phosphorus is an environmentally-limiting macronutrient that roots can only assimilate from soil as soluble inorganic phosphate (Pi, $H_2PO_4^-$). The most abundant P fraction of many soils exists as organic Pi-monoesters (derived from decomposing biomaterial) unavailable for root uptake until hydrolyzed by secretory purple acid phosphatases (PAPs). Plant PAPs belong to a relatively large multigene family whose specific functions in P-metabolism are poorly understood. Purification, characterization, and identification via LC-MS/MS (peptide sequencing) of intracellular (vacuolar) and secreted (cell wall) PAP isozymes upregulated by Pi-starved suspension cell cultures of the model plant *Arabidopsis thaliana* have been complemented by studies of the corresponding loss-of-function mutants. This has allowed us to pinpoint the predominant Pi-starvation-inducible PAP isozymes *(i.e.,* AtPAP12, AtPAP17, AtPAP25, and AtPAP26) that facilitate *Arabidopsis* P-acquisition efficiency. AtPAP26 is of particular interest since it is: (i) the predominant PAP isozyme upregulated by Pi-deprived *Arabidopsis*, and (ii) also markedly upregulated during leaf senescence to remobilize Pi to developing seeds. Kinetic studies with purified vacuolar and secreted AtPAP26 glycoforms demonstrated that it effectively hydrolyzes Pi from a wide range of substrates with high catalytic efficiency. Furthermore, a Pi starvation- and senescence-inducible, tyrosine-phosphorylated and dual-targeted (*i.e.,* cell wall & vacuole) GNA-apple domain lectin (AtGAL1) interacts with, stabilizes, and activates a high-mannose glycoform of AtPAP26. AtPAP26 is emerging as a promising candidate for enhancing the P-acquisition and P-use efficiency of engineered crop plants. Achieving this goal is urgently required to reduce the massive overuse of non-renewable, inefficient, and polluting Pi-containing fertilizers in agricultural production.

Bio:

William Plaxton received BSc (in 1980) and PhD (in 1984) degrees in Biochemistry from Carleton University (Ottawa). His PhD dissertation was under the supervision of Ken Storey and focussed on the metabolic adaptations of intertidal marine molluscs to anoxia stress. Plaxton was awarded an NSERC Post-doctoral Fellowship to conduct research on plant starch metabolism with Jack Preiss at the Dept. of Biochemistry, Michigan State University. In 1986 he was appointed to the faculty in the Dept. of Biology at Queen's University (Kingston). Plaxton's research program has been funded by NSERC and the Queen's Research Chair Program to conduct studies of the organization and control of plant (especially oilseed) glycolysis and respiratory metabolism, and the metabolic adaptations of phosphorus-starved plants. This research has integrated various biochemical, proteomic, genetic, and cell biology tools to characterize the molecular and functional properties of key enzyme proteins (with a particular interest in the crucial post-translational enzyme modifications such as phosphorylation and glycosylation). He has served as the President of the CSPB, and he is the recipient of both the CSPB C.D. Nelson Award and The Society Medal. Plaxton also enjoys Canada's magnificent outdoors and natural beauty, keeping fit, and playing upright and electric bass. https://biology.queensu.ca/people/department/professors/plaxton/

Speaker Program

Oral presentations are not numbered according to the ID# assigned during abstract submission; use the Concurrent Sessions below as a guide to find your new abstract number. The presenter's name is underlined, and student presenters being considered for speaker awards are shown by an asterisk (*).

MONDAY AFTERNOON – Concurrent Session 1–

Room 101		**CSPB-I – Seed Development and Germination** *Chair:* ***Mark Belmonte*** *(University of Manitoba)*
1:15	S1	**Transcriptome landscape of the early *Brassica napus* seed** **Zeigler, D; D. Khan; J.L. Kalichuck; M.G. Becker; M.F. Belmonte** (*University of Manitoba*)
1:30	S2	**Arabidopsis seed stored mRNAs are degraded constantly over aging time, as revealed by new quantification methods** **Zhao, L.[*1]; S. Wang[1]; Y-B. Fu[2]; H. Wang[1]** ([1]*University of Saskatchewan;* [2]*Agriculture and Agri-Food Canada*)
1:45	S3	**Strigolactone receptors from striga activate a latent Arabidopsis signaling pathway to bypass the gibberellin requirement for germination** **Bunsick, M.[*]; K. Nemrish; P. Sung; G. Ly; S. Lumba** (*University of Toronto*)
2:00	S4	**Early chemical priming persistently attenuates induced anthocyanin accumulation with broader metabolic and possible systems-level impact** **Hiiback, K.[*1]; M. Campbell[2]** ([1]*University of Toronto;* [2]*University of Guelph*)
2:15	S5	**Functional characterization of gibberellic acid signalling components in *Striga hermonthica*** **Wong, C.[*]; K. Meteleva; H. McIlwraith; A. Caragea; S. Lumba** (*University of Toronto*)
2:30	S6	**Two hallmarks of plant adaptation viewed through the embryonic lens** **Venglat, P.; K. Tanino** (*University of Saskatchewan*)
Room 102		**CSA-I – Agronomy I – N and P Fertility** *Chair:* ***Jaswinder Singh*** *(McGill University)* and ***Amarjit Basra*** *(OCP North America)*
1:15	S7	**Fall and spring placement of nitrogen fertilizers. Where do enhanced efficiency fertilizers fit?** **Karamanos, R.** (Koch Fertilizer Canada, ULC)
1:45	S8	**Nitrogen and phosphorus nutrition in oat: nutrient uptake and interactive effect on crop lodging and yield** **Ma, B-L.[1]; Z. Zheng[2]; D. Pageau[2]; C. Vera[2]; J. Fregeau-Reid[2]; A. Xue[2]; W. Yan[2]** [1]*Agriculture and Agri-Food Canada;* [2]*AAFC*
2:00	S9	**Nitrogen fertilizer management for inbred seed corn** **Sayem, S.M.[*1]; L. Van Eerd[2]** ([1]*University of Guelph;* [2]*University of Guelph Ridgetown Campus*)
2:15	S10	**Evaluating the effects of organic and inorganic phosphorus amendment on soil biochemical and microbial characteristic in podzol following silage corn cultivation under boreal climate** **Cheema, M.[1]; W. Ali[1]; M. Nadeem[1]; W. Ashiq[1]; M. Zaeem[1]; S. Gillani[1]; S. Khamseh[2]; V. Kavanagh[3]; R. Thomas[1]** ([1]*Grenfell Campus, Memorial University of Newfoundland, Canada;* [2]*Shahrekord University;* [3]*Government of Newfoundland and Labrador*)

2:30	S11	**Evaluation of optical sensors in predicting yield and nitrogen application in sugarbeet (*Beta vulgaris*)** **MacFarlane, J.; L. Van Eerd** (*University of Guelph Ridgetown Campus*)
Room 103		**CSPB-II – Abiotic Stress #1 Resilience to Temperature Extremes** *Chair:* ***Jean-Benoit Charron*** *(McGill University)*
1:15	S12	**Simulating natural environmental cues redefines winter hardiness of *Brachypodium distachyon* by connecting cold acclimation, vernalization, and development** **Charron, J-B.[1]; B.F. Mayer[1]; A. Bertrand[2]** ([1]*McGill University;* [2]*Agriculture and Agri-Food Canada*)
1:30	S13	**Dimerization of Vitis ICE with Vitis FAMA enables activation via a specific MYC element in the Vitis CBF4 promoter sequence** **Nassuth, A.; L. Alibabai; A. Edge; M.A. Rahman** (*University of Guelph*)
1:45	S14	**Using global metabolomic and transcriptomic analysis to assess heat-shock-response functionality in the Antarctic alga Chlamydomonas sp. UWO241** **Possmayer, M.[1]; M. Cvetkovska[1]; N. Malczewski[2]; B. Szyszka[2]; N. Hüner[2]** ([1]*University of Ottawa;* [2]*UWO*)
2:00	S15	**Tissue-specific changes in the apoplastic and intracellular proteome during sub-zero acclimation of winter wheat and rye crowns** **Willick, I.[1]; M. Uemura[2]; B. Fowler[1]; K. Tanino[1]** ([1]*University of Saskatchewan;* [2]*Iwate University*)
2:15	S16	**Thriving or barely surviving: examining heat-stress induced mortality of tamarack under extreme climate conditions** **Murphy, B.[*]; D. Way** (*University of Western Ontario*)
2:30	S17	**Multigenerational heat stress induces phenotypic resilience as well as genetic and epigenetic variations in Arabidopsis thaliana offspring** **Yadav, N.[*]; V. Titov; I. Ayemere; B. Byeon; Y. Ilnytskyy; I. Kovalchuk** *(The University of Lethbridge*)
Room 104		**CSPB-III – Molecular Host-Pathogen Interaction** *Chair:* ***Jacqueline Monaghan*** *(Queen's University)*
1:15	S18	**Root damage and immune responses at cellular resolution** **Geldner, N.** (*University of Lausanne*)
1:45	S19	**The MACPF protein CAD1 is guarded by the plant immune system** **Sementchoukova, I.[*1]; D. Holmes[1]; M. Bredow[1]; K. Siegal[1]; K. Thor[2]; S. Pascetta[1]; C. Zipfel[2]; J. Monaghan[1]** ([1]*Queen's University;* [2]*University of East Anglia*)
2:00	S20	**Sub-functionalization of the calcium-dependent protein kinase CPK28 by site-specific phosphorylation** **Bredow, M.[*1]; D. Holmes[1]; A. Thomson[1]; A. Johnson-Dingee[1]; S. Huber[3]; J. Monaghan[1]; K. Bender[2]** ([1]*Queen's University;* [2]*University of Zurich;* [3]*University of Illinois-Urbana-Champaign*)
2:15	S21	**Biofilm formation contributes to *Pseudomonas syringae* pv. tomato success and suppression of biofilm formation is important for PAMP-triggered immunity in Arabidopsis** **Nunn, G.[*]; A. Fufeng; N. Xiao; A. Halim; R. Cameron** (*McMaster University*)
2:30	S22	**Regulation of plant immune signaling by receptor kinase phosphorylation** **Bender, K.[1]; Y. Kadota[3]; D. Couto[2]; A. Macho[4]; L. Stransfeld[1]; C. Zipfel[1]** ([1]*University of Zurich;* [2]*University of Geneva;* [3]*RIKEN;* [4]*Chinese Academy of Sciences*)
Room 105		**CAPB-I – Bioproducts Production in Plants-Sponsored by Medicago** *Chair:* ***Dominique Michaud*** *(* Université Laval*)*
1:15	S23	**Plant proteases: a continuous battle in molecular farming** **Varennes-Jutras, P.; I. Dodds; R. van der Hoorn** (*University of Oxford*)

1:30	S24	**Development of LED light quality to optimise recombinant protein expression in Nicotiana benthamiana** **Ratcliffe, S.*** (*University of Guelph*)
1:45	S25	**Production of recombinant subunit vaccine candidates against Bovine Respiratory Disease pathogen *Mannheimia haemolytica* as an alternative to antimicrobials** **Kaldis, A.; R. Menassa; T. Alexander; M. Uddin** (*Government of Canada*)
2:00	S26	**Controlling the accumulation of secondary metabolites by plants using antisense oligonucleotides** **Novikov*[2], I.; K. Laikova[1]; N. Galchinsky[1]; R. Useinov[1]; V. Oberemok[1]** [1]*V.I. Vernadsky Crimean Federal University;* [2]*Research Institute of Agriculture of Crimea*
2:15	S27	**Parallel branch pathways have evolved for assembly of major monoterpenoid indole alkaloids with opposite optical rotations in Catharanthus roseus** **Williams, D.*[1]; V. De Luca[1]; Y. Qu[2]** ([1]*Brock University;* [2]*University of New Brunswick*)
2:30	S28	**Towards understanding the basis of substrate specificity in a newly characterized class of plant acyl-ACP thioesterases that produce high-value medium-chain fatty acids** **Kalinger, R.*; O. Rowland; I. Pulsifer** (*Carleton University*)
Room 106		**CBA-I – Ecology and Ecophysiology 1** *Chair:* ***John Markham*** *(University of Manitoba)*
1:15	S29	**Nutrient deposition modifies how arbuscular mycorrhizal fungi influences competitive interactions in plants** **Hicks, K.; H. Maherali** (*University of Guelph*)
1:30	S30	**Nitrogen fixing plant evolution: the interactive effect of elevating CO2 and herbivores on nitrogen fixing plants** **Chen, H.*; J. Markham** (*University of Manitoba*)
1:45	S31	**Spring into action: How warm air and cool soil temperatures influence nitrogen fixation and physiological performance in green alder** **Anderson, P.*; J. Markham** (*University of Manitoba*)
2:00	S32	**Influence of mycorrhizal mutualism and plant life history on the diversification of plant root morphology and function** **Shao, J.*; H. Maherali** (*University of Guelph*)
2:15	S33	**Rhizosphere temperature, tree species and ectomycorrhizae affect nitrogen uptake** **Hawkins, B.; S. Robbins** (*University of Victoria*)
2:30	S34	**Soil moisture and nitrogen, but not phosphorus and light, limit nitrogen fixation in alders in the south western boreal forest** **Markham, J.; P. Anderson** (*University of Manitoba*)
Room 107		**CSHS-I – Horticulture: Pre and Post Harvest Quality** *Chair:* ***Jayasankar Subramanian*** *(University of Guelph)*
1:15	S35	**Mutational genetics in diploid potatoes and pre/post-harvest control of toxicants** **Fofana, B.[1]; K. Ghose[2]; D. Main[1]; A. Somalraju[1]; J. McCallum[1]** ([1]*Charlottetown research and development centre;* [2]*Texas Tech University*)
1:30	S36	**Recent advances in hexanal based packaging technologies to enhance shelf life of fruits** **Subramanian, J.[1]; G. Paliyath[1]; L-T. Lim[1]; K. Subramanian[2]** ([1]*University of Guelph;* [2]*Tamil Nadu Agricultural University*)
2:00	S37	**Mitigation of fruit drop and prolonging of postharvest shelf life in 'Honeycrisp' apples using hexanal** **DeBrouwer, E.J.*[1]; J.A. Sullivan[1]; G. Paliyath[1]; J. Subramanian[2]** *([1]University of Guelph;* [2]*University of Guelph, Vineland)*

2:15	S38	**The pollen tube growth model for precision blossom thinning of apples** **Sherif, S.; C. Allen; K. Yoder** (*Virginia Tech*)
2:30	S39	**Challenges of cultivating saffron under cold climate** **Ayari, M-A.*; L. Lapointe** ([1]*Université Laval*)
Room 108		**CPS-I – Disease Management (Student Oral Presentation)** *Chairs:* ***Vikram Bisht*** *(Manitoba Agriculture)* and ***Tom Fetch*** *(Agriculture and Agri-Food Canada)*
1:15	S40	**Does spraying paraquat increase in-field inoculum of *Colletotrichum fioriniae* in celery production?** **Reynolds, S.*[1]; M.R. McDonald[1]; M. Celetti[2]; L. Droste[1]** ([1]*University of Guelph;* [2]*Ontario Ministry of Agriculture, Food and Rural Affairs*)
1:30	S41	**Ferrous sulfate reduces dollar spot disease on different cultivars of creeping bentgrass** **Rudland, M.*; T. Hsiang; V. Forte-Perri** (*University of Guelph*)
1:45	S42	***In vitro* and in-field response of *Stemphylium vesicarium* to foliar fungicides** **S. Stricker*[1];Pethybridge, S.J.[2]; B. Gossen[3]; M.R. McDonald[1]** ([1]*University of Guelph;* [2]*Cornell University;* [3]*Agriculture and Agri-Food Canada)*
2:00	S43	**Evaluation of yield losses and pyraclostrobin sensitivity in *Leptosphaeria maculans*, cause of blackleg of canola** **Wang, Y.*; S-F. Hwang; A. Akhavan; S. Strelkov** (*University of Alberta*)
2:15	S44	**Effects of solarization, anaerobic soil disinfestation and mustard biofumigation on ginseng replant disease** **Shi, A.*[1]; S. Westerveld[2]** ([1]*University of Guelph;* [2]*Ontario Ministry of Agriculture, Food and Rural Affairs*)
2:30		**Speakers participate in a panel discussion**
Room 109		**CPS-II – Innovations in Plant Pathology Surveillance and Diagnostic Methods** *Chair:* ***Xuechan (Shannon) Shan*** *(University of Guelph)*
1:15	S45	**Diagnostic metagenomics in the context of molecular plant pathology** **Chen, W.[1]; S. Hambleton[1]; K. Seifert[1]; D. Radford[1]; C.A. Levesque[2]** ([1]*Agriculture and Agri-Food Canada;* [2]*Canadian Food Inspection Agency)*
1:30	S46	**Genome-enhanced detection and identification of regulated plant pathogens** **Bilodeau, G.J.[1]; E. Giroux[1]; N. Feau[2]; R.C. Hamelin[2]** ([1]*Canadian Food Inspection Agency;* [2]*University of British Columbia*)
1:45	S47	**Molecular surveillance of Fusarium species and chemotypes of wheat across western Canada** **Oghenekaro, A.[1]; P. Cholango-Martinez[2]; M. Oviedo-Ludena[2]; M. Harding[3]; X. Wang[4]; R. Kutcher[2]; D. Fernando[1]** ([1]*University of Manitoba;* [2]*University of Saskatchewan;* [3]*Agriculture and Forestry;* [4]*AAFC*)
2:00	S48	**Race dynamic, diversity and virulence in *Puccinia striiformis* f. sp. *tritici* in Canada over the last three decades** **Aboukhaddour, R.[1]; K. Ghanbarnia[1]; X. Chen[2]; R. Gourlie[1]; E. Amundsen[1]** ([1]*AAFC;* [2]*USDA*)
2:15	S49	**Comparative study of grapevine red blotch virus (grbv) pcr detection methods and their application to a general lab practice** **Kim, W-S.** (Norgen Biotek Corp.)
2:30		**Speakers participate in a panel discussion**

MONDAY AFTERNOON – Concurrent Session 2–

Room 101		**CAPB-II – Molecular Plant Improvement** *Chair: **Yafan Huang** (Performance Plants Inc.)*
3:15	S50	**Improvement of biomass digestibility through the manipulation of tricin biosynthesis pathway in rice** **Lo, C[1]; A.C.W. Lui[1]; P. Ying[2]; L. Wang[1]; T. Umezawa[2]; Y. Tobimatsu[2]** ([1]*The University of Hong Kong;* [2]*Kyoto University*)
3:30	S51	**mRNA long-distance transport of osmotic responsive genes in tomato/potato heterograft** **Hezema, Y.[*1]; S. Sherif[2]; M. Shukla[1]; P. Saxena[1]** ([1]*University of Guelph;* [2]*Virginia Tech*)
3:45	S52	**Complex Regulation of Condensed Tannin Biosynthesis in Poplar by R2R3 MYB Activators and Repressors** **Constabel, P.** (University of Victoria)
4:00	S53	**Genome-wide association analysis reveals the genetic basis of root system architecture in soybean** **Seck, W.[*]; D. Torkamaneh; F. Belzile** (*Université Laval*)
4:15	S54	**Metabolomics-assisted applications in nutritional genomics and crop improvement** **Wijekoon, C.[1]; S. Acharya[1]; S. Singer[1]; R. Weselake[2]** ([1]*Agriculture and Agri-Food Canada;* [2]*University of Alberta)*
4:30	S55	**A unified DNA assembly platform for plant research and genome editing** **Chiasson, D[2]; M. Bircheneder[1]; M. Parniske[1]** ([1]*LMU Munich;* [2]*Saint Mary's University)*
Room 102		**CSA-II – Agronomy II – Cropping Systems** *Chair: **Mumtaz Cheema** (Memorial University)*
3:15	S56	**Integrating perennial forage seed crops in the cropping systems in western Canada: An agroecological and economic assessment** **Khanal, N.[1]; R. Azooz[1]; J. Otani[1]; C. Yoder[2]; N. Lupwayi[1]** ([1]*Agriculture and Agri-Food Canada;* [2]*Government of Alberta*)
3:30	S57	**Responses of various cover crop species to agro-mineral soil amendment over time** **VanVolkenburg, H.[1*]; F. Guinel[2]; L. Vasseur[1]** ([1] *Brock University;* [2] *Wilfrid Laurier University)*
3:45	S58	**New long-term platforms to investigate agro-ecological services of cover crops across various grain cropping systems in Ontario** **Chapagain, T.[1]; M. Stewart[1]; G. Chu[1]; M. Raizada[1]; L. Van Eerd[2]; B. Deen[1]; D. Hooker[1]** ([1]*University of Guelph;* [2]*University of Guelph Ridgetown Campus*)
4:00	S59	**Sustainable agriculture kits (SAKs) for subsistence farmers** **Raizada, M.[1]; T. Chapagain[1]; P. Roshan[2]; B. Ghimire[2]; M. Thilakarathna[1]; L. Smith[1]; R. Devkota[1]; M. Sharma[3]; B. Thapa[2]** ([1]*University of Guelph;* [2]*Local Initiatives for Biodiversity, Research and Development;* [3]*Anamolbiu Prvt Limited*)
4:15	S60	**The effect of micronutrients and macronutrients on the development and grain yield of annual canarygrass (*Phalaris canariensis* L.)** **May, W.** (Agriculture and Agri-Food Canada)
4:30	S61	**Maximizing canola yield by application of N, S, Micronutrients, Fungicide and Growth Regulator in Northwestern Ontario** **Sahota, T.** (LUARS Lakehead University Thunder Bay)

Room 103		**CSPB-IV – Abiotic Stress #2 Oxidative and Nutrient Stress** *Chair:* ***Mike Deyholos*** *(University of British Columbia-Okanagan)*
3:15	S62	**The Antarctic alga Chlamydomonas sp. UWO241 as an emerging model photosynthetic adaptation to extreme conditions: perspectives and challenges** **Cvetkovska, M.** (University of Ottawa)
3:30	S63	**Resource independent plant competition alters ROS levels, antioxidant status and susceptibility to cell death in Arabidopsis thaliana** **Berardi, N.[*]; C. Swanton; S. Amirsadeghi** (*University of Guelph*)
3:45	S64	**Metabolism of reactive oxygen and nitrogen species during anoxic stress and reaeration in tobacco plants differentially expressing alternative oxidase** **Jayawardhane, J.[*1]; A. Igamberdiev[1]; G.C. Vanlerberghe[2]** ([1]*Memorial University of Newfoundland;* [2]*University of Toronto Scarborough*)
4:00	S65	**An inverse correlation between surface temperature and nitrogen rate predicted by a thermodynamic theory** **Alzaben, H[*1]; C. Swanton[2]; R. Fraser[1]** ([1]*University of Waterloo;* [2]*University of Guelph*)
4:15	S66	**Photoperiodic injury in tomato is linked to circadian control of both nitrate assimilation and ROS metabolism** **Innes, G.; L. Tian; T.R.J.G Marie; M.E. Orozco; M.C. Micallef; B.J. Micallef** (*University of Guelph)*
4:30	S67	**High condensed tannin levels protect poplar against oxidative damage generated by UV-B exposure or drought stress** **Gourlay, G.[*1]; J-P. Schnitzler[2]; I. Zimmer[2]; A. Albert[2]; B. Hawkins[1]; P. Constabel[1]** ([1]*University of Victoria;* [2]*Helmholtz Zentrum*)
4:45	S68	**Impact of phosphate or phosphite resupply on the proteome and phosphoproteome of phosphate-deprived Arabidopsis thaliana suspension-cell cultures** **Ghahremani, M.[1]; D. Mehta[2]; M. Pérez-Fernández[3]; W. Plaxton[1]; T. Barber-Cross[2]; R.G. Uhrig[2]** ([1]*Queen's University;* [2]*University of Alberta;* [3]*University Pablo de Olavide*)
Room 104		**CSPB-V – Bioinformatics and Systems Biology** *Chair:* ***R Glen Uhrig*** *(University of Alberta)*
3:15	S69	**Global insights into duplicated gene expression and alternative splicing in polyploid Brassica napus (canola) in response abiotic stress by transcriptome sequencing** **Adams, K.** (University of British Columbia)
3:30	S70	**Linking RNA processing and kinase signaling in the Arabidopsis stress response** **Mehta, D.** (University of Alberta)
3:45	S71	**RNA-Seq estimated gene abundance differences between Zea mays genotypes are strongly affected by read mapping bias** **Zhan, S.; J. Tosh; C. Griswold; L. Lukens** (*University of Guelph*)
4:00	S72	**A Tale of Two Genomes: Methylome and transcriptome profiling of Brassica napus seed development** **Khan, D.[*]; D. Ziegler; M. Belmonte** (*University of Manitoba*)
4:15	S73	**De novo assembly of the pokeweed genome provides insight into pokeweed antiviral protein (PAP) gene expression** **Neller, K.[*1]; C. Diaz[1]; K. Hudak[1]; A. Platts[2]** ([1]*York University;* [2]*New York University*)
4:30	S74	**The long story of small RNA: sRNA architecture of Brassica napus seed development** **Ziegler, D.[*]; D. Khan; M. Belmonte** (*University of Manitoba*)
Room 105		**CSA-III – Breeding and Genetics** *Chair:* ***Joe Colasanti*** *(University of Guelph)*
3:15	S75	**Can phloem derived small RNA modify gene regulation in shoot stem cells?** **Minow, M.[*]; V. Lesy; J. Colasanti; V. Coneva; M. Misyura** (*University of Guelph*)

3:30	S76	**Characterization of B-genome specific high copy hAT MITE families in Brassica genome** **Perumal, S.[*]; I. Parkin** (*[1]Agriculture and Agri-Food Canada (AAFC)*)
3:45	S77	**Age of divergence among subgenomes determines gene expression between paralogs in Camelina species** **Chaudhary, R.[*1]; S. Kagale[2]; C.S. Koh[3]; E.E. Higgins[4]; A.G. Sharpe[3]; I.A.P. Parkin[4]** (*[1]University of Saskatchewan; [2]National Research Council Canada; [3]Global Institute for Food Security; [4]Agriculture and Agri-Food Canada*)
4:00	S78	**Transcriptome changes associated with phytoglobin expression during germination of barley seeds** **Zafari, S.[*1]; K.H. Hebelstrup[2]; A. Igamberdiev[1]** (*[1]Memorial University of Newfoundland; [2]Aarhus University*)
4:15	S79	**Genome-wide analysis of the SPL/miR156 unit in small grain cereals** **Tripathi, R.[*]; J. Singh** (*McGill University*)
Room 106		**CBA-II – Ecology and Ecophysiology 2** *Chair: **Art Fredeen** (University of Northern British Columbia)*
3:15	S80	**Influence of epiphyllous bryophytes on the water cycle in a tropical sub montane cloud forest in Costa Rica** **Fenton, N.** (Université du Québec en Abitibi-Témiscamingue (UQAT))
3:30	S81	**Fourteen-year impacts of partial and total forest harvest on epixylic bryophyte species in boreal black spruce –feathermoss forests** **Opoku-Nyame, J.[*1]; A. Leduc[2]; N. Fenton[1]** (*[1]Université du Québec en Abitibi-Témiscamingue (UQAT); [2]University of Quebec in Montreal)*
3:45	S82	**Modelling successional dynamics of Canadian boreal mixed woods prior to and following the Spruce Budworm outbreak** **Maleki, K.[*1]; M. Gueye[1]; B. Lafleur[1]; A. Leduc[2]; Y. Bergeron[1]** (*[1]University of Quebec in Abitibi-Temiscamingue (UQAT); [2]University of Quebec in Montreal*)
4:00	S83	**How is the understory vegetation influenced by changes in tree canopy dominance in black spruce and trembling aspen in a Canadian boreal forest?** **Rodríguez, J.[*1]; É. Mestre[2]; N. Fenton[1]; S. Kembel[2]; Y. Bergeron[1]** (*[1]Université du Québec en Abitibi-Témiscamingue (UQAT); [2]Université du Québec à Montréal (UQAM)*)
4:15	S84	**Compensatory growth release in surviving lodgepole pine in Northern BC after Mountain Pine Beetle attack** **McEwen, J.** (*University of Northern BC*)
4:30	S85	**Finding and re-measuring forest carbon plots after fifteen years: Why, how and so what?** **Fredeen, A.; L. Gan; C. Elkin** (*University of Northern BC*)
Room 107		**CSHS-I – Horticulture: Field Production** *Chair: **Bourlaye Fofana** (Agriculture and Agri-Food Canada)*
3:15	S86	**Distribution and management of the carrot cyst nematode (*Heterodera carotae*) in Ontario, Canada** **Blauel, T.[1]; D. Van Dyk[2]; K. Vander Kooi[1]; Q. Yu[3]; M.R. McDonald[1]** (*[1]University of Guelph; [2]Ontario Ministry of Agriculture, Food and Rural Affairs; [3]Agriculture and Agri-Food Canada)*
3:30	S87	**Mycorrhizal fungi in the roots of onion and carrot in relation to mycorrhizal fungal inoculant and soil phosphorus** **Ilyas, U.[*1]; M. Raizada[1]; L. du Toit[2]; M.R. McDonald[1]** (*[1]University of Guelph; [2]Washington State University*)

3:45	S88	**Evidence for a recent re-expansion of market gardening in Ontario through organic field fruit and vegetable production** Chappell, E; E. Deboer; B.J. Micallef (*University of Guelph)*
4:00	S89	**Analyzing the effects of nitrogen fertilizer source on flower bud induction in day-neutral strawberry** **Paul, A.*; V. Gravel** (*McGill University*)
4:15	S90	**Light quality and night interruption controls morphogenesis and flowering time in day neutral strawberry** **Sidhu, V.*; V. Gravel; S. Jabaji** (*McGill University*)
4:30	S91	**Microhazels: A novel industry for Ontario agriculture** **Shukla, M.; P. Saxena** (*University of Guelph*)
Room 108		**CPS-III – Molecular Host-Pathogen Interactions (Student Oral Presentations)** *Chairs:* ***Barry Saville*** *(Trent University)* and ***Tom Fetch*** *(Agriculture and Agri-Food Canada)*
3:15	S92	**Transcriptomic analysis of the response of *Brassica napus* to *Plasmodiophora brassicae*** **Galindo-González, L.; S. Strelkov; S-F. Hwang; Q. Zhou*** (*University of Alberta*)
3:30	S93	**Transcriptome profiling of incompatible and compatible interactions between *Brassica napus* and *Leptosphaeria maculans*** **Padmathilake, R.*[1]; D. Fernando[1]; R. Bélanger[2]; Z. Zou[1]; P. Hu[1]; S. Jia[1]; H. Sonah[2]; A. Carter[3]; J. Tucker[1]; M-E. Balesdent[4]** ([1]*University of Manitoba;* [2]*Université Laval;* [3]*Agriculture & Agri-Food Canada;* [4]*UMR INRA AgroParisTech BIOGER*)
3:45	S94	**Tissue specific RNA sequencing of *Brassica napus* in response to *Sclerotinia sclerotiorum* infection** **Walker, P.*** (University of Manitoba)
4:00	S95	**Boost your yield, harness the forcefield: advancing RNAi-based biocontrols against agronomic pathogens.** **Wytinck, N.*; D. Khan; A. McLoughlin; D. Ziegler; D. Sullivan; S. Whyard; M. Belmonte** *(University of Manitoba*)
4:15	S96	**Gene editing to enhance pathogen-induced cell wall reinforcement resistance to late blight in Russet Burbank potato** **Hegde, N.*[1]; D. Doddamani[2]; Y. Kalenahalli[3]; N. Soni[1]** ([1]*McGill University;* [2]*The Roslin Institute, The University of Edinburgh;* [3]*University of Adelaide*)
4:30		**Speakers participate in a panel discussion**
Room 109		**CPS-IV/CSA-IV – Innovations in Fusarium Management in Wheat** *Chair:* ***Denis Gaudet*** *(CPS Board Member, Lethbridge, Alberta)*
3:15	S97	**Assessing the impact of fungicides on FHB caused by Fusarium spp. on two wheat cultivars in Alberta** **Asif, M.*[1]; S. Strydhorst[2]; S. Strelkov[1]; A. Terry[3]; D. Pauly[2]; J. Feng[2]; M. Harding[4]** ([1]*University of Alberta;* [2]*Alberta Agriculture and Forestry;* [3]*Syngenta;* [4]*Agriculture and Forestry)*
3:30	S98	**Genetic factors affecting Fusarium head blight resistance improvement and linkage drag from introgression of exotic Sumai 3 alleles (including Fhb1, Fhb2, and Fhb5) in hard red spring wheat** **Brar, G.S.[1]; A. Brûlé-Babel[2]; Y. Ruan[3]; M.A. Henriquez[2], C.J. Pozniak[1]; R. Kutcher[1]; P.J. Hucl[1]** ([1]*University of Saskatchewan;* [2]*University of Manitoba;* [3]*Agriculture and Agri-Food Canada*)
3:45	S99	**Control of plant fungal pathogens using exogenous RNA** **Clark, S.; E. Liu; U. Hemraz; S. Dodard; Y. Liu; S. Hrapovic** (*National Research Council Canada*)

4:00	S100	**Multi-omic studies reveal the insertion of new mycotoxin virulence factors in Fusarium poae.** **Overy, D.[1]; T. Witte[1]; A. Sproule[2]; A. Hermans[1]; A. Johnston[1]; A. Xue[3]; J. Dettman[1]; H. Nguyen[1]; L. Harris[1]** (*[1]Ottawa Research and Development Centre; [2]Ottawa Research and Development Centre; [3]AAFC)*
4:15	S101	**Targeted mutation of multiple putative effectors in *Fusarium graminearum* utilizing CRISPR/Cas9** **Foster, A; R. Subramaniam** (*Agriculture and Agri-Food Canada*)
4:30	S102	**Development of *Simplicillium lamellicola* as a biocontrol agent against the wheat pathogen *Fusarium graminearum*** **Abaya, A.*; T. Hsiang** (*University of Guelph)*

5:00 – 7:00 Poster Session 1 at Peter Clark Hall,
Located downstairs in the University Center.

Students that have a poster with an ODD number are to remain by their posters until they are judged.

Beverages will be served.

TUESDAY AFTERNOON – Concurrent Session 3–

Room 101		**CSPB-VI – Abiotic Stress #3 Abiotic Stress Response Mechanisms** *Chair:* ***Sophia Stone*** *(Dalhousie University)*
1:15	**S103**	**Flooding tolerance is regulated through the MiR156/SPL module in *Medicago sativa*** **Feyissa, B.A.[*1]; Y. Papadopoulos[2]; S. Kohalmi[3]; A. Hannoufa[4]** ([1]*University of Western Ontario;* [2]*Agriculture and Agri-Food Canada;* [3]*The University of Western Ontario;* [4]*Agriculture and Agri-Food Canada)*
1:30	**S104**	**Identifying *Brachypodium distachyon* proteins interacting with histone deacetylase BdHD1** **Torrez, A.[*1]; L. Tian[2]; H.A.L. Henry[1]** ([1]*The University of Western Ontario;* [2]*Agriculture and Agri-Food Canada*)
1:45	**S105**	**Physiological and biochemical responses of alfalfa (*Medicago sativa* L.) to salt stress** **Bhattarai, S.[*1]; C. Karunakaran[2]; K. Tanino[1]; Y-B. Fu[3]; B. Coulman[1]; B. Biligetu[1]** ([1]*University of Saskatchewan;* [2]*Canadian Light Source;* [3]*Agriculture and Agri-Food Canada*)
2:00	**S106**	**The ABA-responsive SnRK1 kinase interaction network in *Arabidopsis thaliana*** **Carianopol, C.[*]; A. Chan; S. Lumba; S. Gazzarrini** (*University of Toronto*)
2:15	**S107**	**Characterizing the role of *Arabidopsis thaliana* RING-type E3 Ligase XBAT35.2 and its substrates in abiotic stress tolerance** **Li, Q.[*]; S. Stone** (*Dalhousie University*)
2:30	**S108**	**Overexpression of de novo DNA methyltransferase BdDRM2 alters *Brachypodium distachyon* development and abiotic stress response** **Ouellette, L.[*]; B.F. Mayer; J-B. Charron** (*McGill University*)
Room 102		**CSPB-VI – Specialized Metabolism** *Chair:* ***Jake Stout*** *(University of Manitoba)*
1:15	**S109**	**Molecular regulation of monoterpene metabolism in Lavandula** **Mahmoud, S.** (UBC Okanagan)
1:30	**S110**	**Functional study of Lavandula prenyl diphosphate synthase genes** **Adal, A.M.[*1]; S. Mahmoud[2]** ([1]*UBC;* [2]*UBC Okanagan*)
1:45	**S111**	**Investigating transport of seco-iridoids in Catharanthus roseus** **Dastmalchi, M.[1]; Y. Qu[2]; V. De Luca[1]** ([1]*Brock University;* [2]*University of New Brunswick)*
2:00	**S112**	**Mitragyna speciosa – a promising player in the opioid crisis** **Moeller, E.; L. Virta; K. Theriault; J. Manduca; M. Perreault; T. Akhtar** (*University of Guelph*)
2:15	**S113**	**Distinct metabolic modes drive monoterpenoid biosynthesis in a natural population of Pelargonium graveolens (rose scented geranium)** **Phillips, M.[*]; Bergman, M.** (*University of Toronto – Mississauga*)
2:30	**S114**	**Profiling anthocyanin species involved in developmentally regulated programmed cell death in lace plant (*Aponogeton madagascariensis*) leaf development** **Denbigh, G.[*1]; S. MacKinnon[2]; G. Pitcher[2]; H. Wright[2]; C. Lacroix[3]; A. Gunawardena[1]** ([1]*Dalhousie University;* [2]*Agriculture and Agri-food Canada;* [3]*University of Prince Edward Island)*
Room 103		**CSPB- VIII – Cell Biology** *Chair:* ***Jaideep Mathur*** *(University of Guelph)*
1:15	**S115**	**Hsp70 mediates programmed cell death during the remodeling of lace plant leaves (*Aponogeton madagascariensis*)** **Rowarth, N.[*1]; A. Dauphinee[2]; G. Denbigh[1]; A. Gunawardena[1]** ([1]*Dalhousie;* [2]*Swedish University of Agricultural Sciences*)

1:30	S116	**An Arabidopsis G-protein-coupled receptor-like module regulates cellulose synthase enzyme secretion** **McFarlane, H.** (University of Toronto)
1:45	S117	**Identification and characterization of novel targets for a subfamily of Arabidopsis calmodulin-like (CML) proteins** **Teresinski, H.[*]; W. Snedden** (*Queen's University*)
2:00	S118	**Make or break? Microtubule growth and shrinkage are controlled by dynamic turnover of plus-end proteins** **Halat, L.[*1]; R. Eng[2]; D. Coombs[1]; G. Wasteneys[1]** ([1]*University of British Columbia;* [2]*Max Planck Institute of Molecular Plant Physiology*)
2:15	S119	**Mechanical role of callose plugs in pollen tubes** **Kapoor, K.[*]; A. Geitmann** (*McGill University*)
2:30	S120	**DONGLE and DAD-LIKE LIPASE2 enriched sites create organelle interaction hubs** **Mathur, J.; M. Lobbezoo[*]; N. Mathur** (*University of Guelph*)
Room 104		**CPS-V/CSPB-IX – Molecular Host-Pathogen Interaction** *Chair:* ***Dilantha Fernando*** *(University of Manitoba)*
1:15	S121	**Transcriptomic response of multiple Brassica species to *Sclerotinia sclerotiorum* infection** **de Jong, G.; K. Adams** (*University of British Columbia*)
1:30	S122	**Lectin genes in Brassica napus enhance resistance to the fungal pathogen *Sclerotinia sclerotiorum*** **Buchwaldt, L.; D. Hegedus; D. Bekkaoui; J. Durkin; J. Nettleton; E. Dzanaovic** *(Agriculture and Agri-Food Canada)*
1:45	S123	**Investigating the function of the APSES protein encoding gene apu2 (nlt1) during U. maydis biotrophic growth** **Saville, B.[1]; E. Storfie[1]; M. Seegobin[1]; J. Meade[2]; P. Mukondiwa[1]; L. Branch[1]; M. Donaldson[1]** ([1]*Trent University;* [2]*University of Toronto*)
2:00	S124	**Characterization of the Pyrenophora tritici-repentis-barley interaction** **Aboukhaddour, R.[4]; B. Wei[1]; S. Strelkov[1]; M. Moscou[2]; K. Sato[3]** [1]*University of Alberta;* [2]*The Sainsbury Laboratory*; [3]*Institute of Plant Science and Resources, , 710-0046, Japan;* [4]*AAFC*
2:15	S125	**Relationship between foliar symptoms and gene expression induced by Pear Decline phytoplasma** **Kaviani, M.; P.H. Goodwin; D. Hunter** (*University of Guelph)*
2:30	S126	**Update on Manitoba potato and horticultural crops disease and insect pests in 2018.** **Bisht, V.** (Manitoba Agriculture)
Room 105		**CSHS-III – Controlled Environment 1** *Chair:* ***Youbin Zheng*** *(University of Guelph)*
1:15	S127	**Comparative analysis between conventional and novel water treatment technologies in recirculating hydroponics** **Levesque, S.[*1]; T. Graham[1]; D. Bejan[2]; P. Zhang[1]; J. Lawson[1]; M. Dixon[1]** ([1]*University of Guelph;* [2]*Environmental Technology Consultant*)
1:30	S128	**Focusing on natural changes in solar spectrum to better understand plant light responses** **Marie, T.R.J.G.[*]; B.J. Micallef; B. Grodzinski** (*University of Guelph)*
1:45	S129	**Enhancing plant growth using light emitting diode (LED) technology** **Uhrig, R.G.; S. Scandola** (*University of Alberta*)
2:00	S130	**Optimizing spectral quality of light emitting diodes light for controlled-environment microgreen production** **Ying, Q.[*]; Y. Kong; G.G. Bozzo; Y. Zheng** (*University of Guelph*)

2:15	S131	**Optimizing growing conditions for romaine lettuce (Lactuca Sativa L. var. Longifolia) production in a plant factory** **Bayley, D.*; T. Graham; M. Dixon** (*University of Guelph*)
2:30	S132	**Monitoring of functional state of in vitro preserved plants in Lavandula angustifolia Mill.** **Novikov, I.[3]; V. Brailko[1]; I. Mitrofanova[2]; N. Ivanova[1]; O. Mitrofanova[1]** ([1]*FSFIS "The Nikita Botanical Gardens – National Scientific Center of the RAS, Yalta;* [2]*FSFIS "The Nikita Botanical Gardens - National Scientific Center of the RAS"* [3]*Research Institute of Agriculture of Crimea*)
Room 106		**CBA-III – Ecology and Ecophysiology 3** *Chair:* ***Tammy Elliot*** *(*Université de Montréal)
1:15	S133	**Precarity of American Water Willow (*Justicia americana*) in Ontario** **Vasseur, L.[1]; O. Groff[2]** ([1]*Brock University;* [2]*Land Care Niagara*)
1:30	S134	**Integrated metabolic strategy: a framework for predicting the evolution of carbon-water tradeoffs within plant clades** **Goud, E.*[1]; M. Fishbein[2]; J. Sparks[1]; M. Fishbein[2]; A. Agrawal[1]** ([1]*Cornell University;* [2]*Oklahoma State University*)
1:45	S135	**Cryopreservation and reintroduction of Hill's thistle (*Cirsum hillii*) to its natural habitat** **Bi, W.; P. Saxena; M. Shukla; A. Saxena** (*University of Guelph*)
2:00	S136	**A comparison of the vascularization and morphology of floral nectaries in North American asters and goldenrods of tribe Astereae** **Braun, K.*; A. Davis** (*University of Saskatchewan*)
2:15	S137	**Impact of perimeter plantings on vineyard ecology** **Hughes, M.*; L. Vasseur** (*Brock University*)
2:30	S138	**The changing flora of a UNESCO Biosphere Reserve: a phylogenetic perspective** **Elliott, T.*[1]; J. Davies[2]** ([1]*Institut de recherche en biologie végétale;* [2]*University of British Columbia*)
Room 107		**CSA-V/CSPB-X – Soybean Breeding, Genetics, and Physiology** *Chair:* ***Istvan Rajcan*** *(University of Guelph)*
1:15	S139	**Genetic diversity in public soybean breeding programs** **Bruce, R.[1]; D. Torkamaneh[2]; F. Belzile[2]; I. Rajcan[1]; M. Eskandari[1]; A. Ficht[1]; C. Grainger[1]** ([1]*University of Guelph;* [2]*Université Laval)*
1:30	S140	**Identification of a potential candidate gene for the E8 maturity locus in soybean (Glycine max)** **Sadowski, M.*[1]; B. Samanfar[2]; E. Cober[3]; M. Charette[3]; F. Dehne[1]; J. Green[1]; A. Golshani[1]** ([1]*Carleton University;* [2]*Agriculture and Agri-Food Canada;* [3]*AAFC Ottawa-RDC*)
1:45	S141	**Increasing soybean oil yield through targeted gene silencing and overexpression** **Fedosejevs, E.; Y. Ye; E. Myers; J. Thelen** (*University of Missouri*)
2:00	S142	**A compensatory mutation in the GmNFR5α gene restores soybean-rhizobia symbiosis fitness** **Torkamaneh, D.; F. Chalifour; C. Beauchamp; H. Maaroufi; F. Belzile** (*Université Laval*)
2:15	S143	**Identification of differentially-expressed genes involved in seed protein content in soybean (*Glycine Max*) grown In Western Vs. Eastern Canada** **Jahid, B.*[1]; B. Samanfar[2]; E. Cober[3]; L. Tan[2]; D. Luckert[2]; A. Golshani[1]** ([1]*Carleton University;* [2]*Agriculture and Agri-Food Canada;* [3]*AAFC Ottawa-RDC*)
2:30	S144	**Climate and daylength influence on soybean phenology in Manitoba and Ontario** **Ort, N.*[1]; M. Morrison[2]; E. Cober[3]; Y. Lawley[1]; D. McAndrew[2]** ([1]*University of Manitoba;* [2]*Agriculture and Agri-Food Canada;* [3]*AAFC Ottawa-RDC*)

Room 108		**CPS-VI – Innovations in Plant Pathology P1 (Student Oral Presentation)** *Chairs:* ***David Joly*** *(Université de Moncton)* and ***Tom Fetch*** *(Agriculture and Agri-Food Canada)*
1:15	S145	**Genomic and virulence differences between two sibling Clarireedia species causing dollar spot on grasses** **Valliani, M.[*]; M. Nasr-Sharif; J. Wang; P. Goodwin; T. Hsiang** (*University of Guelph*)
1:30	S146	**The first report of a culturable microbiome from pollinated style tissue** **Thompson, M.[*1]; M. Raizada[1]; A. Shrestha[1]; J. Rinne[1]; C. Shearer[1]; V. Limay-Rios[1]; L. Reid[2]** ([1]*University of Guelph;* [2]*Agriculture and Agrifood Canada)*
1:45	S147	**Developing a model for investigating pathogenesis by fungal hybrids using *Ustilago maydis* and *Sporisorium reilianum*** **Storfie, E.[*]; B. Saville** (*Trent University*)
2:00	S148	**Genome-wide-association studies on the resistance of rutabaga accessions to *Plasmodiophora brassicae* isolates from Alberta, Canada** **Yu, Z.[*]; R. Fredua-Agyeman; S. Hwang; S. Strelkov** (*University of Alberta*)
2:15	S149	**Molecular characterization and quantification of mycotoxins produced by Fusarium spp** **Durrani, P.[*]; B.M. Pillai** (*Mahidol University*)
2:30		**Speakers participate in a panel discussion**
Room 109		**CSPB-XI/CWSS-I – Weeds, Herbivores and Parasites** *Chair:* ***François Tardif*** *(University of Guelph)*
1:15	S150	**Evaluation of acetolactate synthase inhibitors in Chenopodium album L. populations in Ontario** **Mo, C.[*1]; F. Tardif[1]; I. Rajcan[1]; M. Cowbrough[2]** ([1]*University of Guelph;* [2]*Government of Ontario*)
1:30	S151	**The use of cereal rye (*Secale cereale* L.) cover crops to control Canada fleabane (*Conyza canadensis* (L.) Cronq.)** **Vanhie, T.[*1]; F. Tardif[1]; C. Swanton[1]; M. Cowbrough[2]** ([1]*University of Guelph;* [2]*Government of Ontario*)
1:45	S152	**Evolution of three herbicide defence strategies: Fitness costs of glyphosate resistance, escape, and tolerance in an agricultural weed** **Teitel, Z.[*]; C. Caruso** (*University of Guelph*)
2:00	S153	**Evaluating seed treatments for the management of soybean cyst nematode (*Heterodera glycines* Ichinohe) in dry bean (*Phaseolus vulgaris* L.).** **Katsande, T.[*1]; K. Jordan[1]; C. Trueman[2]; C. Gillard[2]; A. Schaafsma[2]** ([1]*University of Guelph;* [2]*University of Guelph - Ridgetown Campus)*
2:15	S154	**Red alder defense mechanisms against western tent caterpillar defoliation** **Boateng, K.[*1]; B. Hawkins[1]; P. Constabel[1]; A. Yanchuk[2]** ([1]*University of Victoria;* [2]*BC Ministry of Forests, Lands, Natural Resource Operations and Rural Development*)
2:30	S155	**Investigating the basis of strigolactone perception by HYPOSENSITIVE TO LIGHT/KARRIKIN INSENSITIVE 2** **Schuetz, S.[*2]; S. Lumba[2]; H. Al Galib[2]; P. McCourt[2]; A. Arellano Saab[2]; S. Toh[1]; P. Stogios[2]** ([1]*Meiji University;* [2]*University of Toronto)*

TUESDAY AFTERNOON – Concurrent Session 4–

Room 101		**CSPB-XII – Development and Reproduction** *Chair:* ***Daphne Goring*** *(University of Toronto)*
3:15	S156	**Arabidopsis clade I TGACG-motif binding basic leucine-zipper transcription factors mediate BLADE-ON-PETIOLE-dependent activities in development and defense** **Wang, Y.[*1]; C. Bergin[1]; B. Salasini[1]; M. Khan[1]; B. Devi[1]; M. Bush[1]; B. Oyetoran[1]; M.L. Smith[1]; R. Subramaniam[2]; S.R. Hepworth[1]** ([1]*Carleton University;* [2]*Agriculture and Agri-Food Canada*)
3:30	S157	**A role for receptor kinases in regulating compatible pollen responses in the Brassicaceae stigma** **Lee, H.K.[*]; D. Goring** (*University of Toronto*)
3:45	S158	**The E3 ubiquitin ligase XERICO modulates stomatal development in *Arabidopsis thaliana*** **Mohamed, D.[*]; E. Vonapartis; C. Carianopol; S. Gazzarrini** (*University of Toronto*)
4:00	S159	**A mechanical feedback loop regulates morphogenesis of pavement cell shapes in Arabidopsis** **Eng, R.[*]; A. Sampathkumar; R. Schneider** (*Max Planck Institute of Molecular Plant Physiology*)
4:15	S160	**Molecules in Action: Quantum dot enabled studies of plant growth regulation** **Erland, L.A.E.[1]; S.J. Murch[1]; P.K. Saxena[2]** ([1]*UBC;* [2]*University of Guelph*)
4:30	S161	**Family Ties: the expression of AROGENATE DEHYDRATASES** **Van Brenk, J.[*]; E. Cornelius; S. Kohalmi** (*The University of Western Ontario*)
Room 102		**CSHS-IV – Controlled Environment 2** *Chair:* ***Karen Tanino*** *(University of Saskatchewan)*
3:15	S162	**Magic blue light: A versatile mediator of plant elongation** **Kong, Y.; K. Schiestel; D. Kamath; R, Johnson; Y. Zheng** (*University of Guelph*)
3:30	S163	**Adapted crops for the low light indoor environment: a concept for year round sustainable gardening in the home with potential for commercial greenhouse production** **Tanino, K.[1]; E. Benic[1]; M. Nair[2]** ([1]*University of Saskatchewan;* [2]*LLT Plants Inc.*)
3:45	S164	**Cultural and genetic approaches for improving the response of greenhouse vegetables to extended photoperiod and supplemental lighting** **Orozco, M.E.; T.R.J.G. Marie; M. Micallef; B.J. Micallef** (University of Guelph)
4:00	S165	**Comparison of a supplemental lighting control algorithm and conventional threshold control for greenhouse tomato production** **Poel, B.[1]; X. Hao[2]; M. Yelton[1]; E. Weissman[1]** ([1]*LumiGrow Inc.;* [2]*Agriculture and Agri-Food Canada*)
4:15	S166	**Evaluating the impact of Inter-canopy LED Lighting on the production of Bush Beans within a Controlled Environment** **Stoochnoff, J.[*]; T. Graham; M. Dixon** (*University of Guelph*)
4:30	S167	**Canopy growth manipulation and adventitious root development in Kalanchoe blossfeldiana cuttings using targeted LED lighting spectra** **Rasool, A.[*]** (University of Guelph)
Room 103		**CSHS-V/CPS-VII – Cannabis Production and Disease Management- Sponsored by Innotech Albert** *Chair:* ***Albert Tenuta*** *(OMAFRA)*
3:15	S168	**Indoor *Cannabis sativa* L. production: current practices and research directions** **Zheng, Y.** (University of Guelph)

3:45	S169	**Variation in rootzone environment influences growth and yield of drug-type cannabis cultivars during the flowering stage** **Yep, B.[*1]; N.V. Gale[2]; Y. Zheng[1]** ([1]*University of Guelph;* [2]*Green Relief*)
4:00	S170	**Diseases that can devastate *Cannabis sativa* production – bud rots, powdery mildew and root and crown rots.** **Punja, Z.** (Simon Fraser University)
4:30	S171	**Effect of methyl jasmonate on terpene/cannabinoid biosynthesis and suppression of gray mold in *Cannabis sativa* L.** **Joly, D.; C. Cormier; C. Balthazar; A. Cull** (*Université de Moncton*)
Room 104		**CSPB-XIII/CPS-VIII/CAPB-III – Innovations in Biotic and Abiotic Stress in Potato** *Chair:* ***Nathalie Beaudoin*** *(University of Sherbrooke)*
3:15	S172	**Increased resistance to potato common scab is associated with changes in the tuber periderm** **Turcotte, M.A.[*]; S. Labidi; S. Lerat; N. Beaudoin** (*University of Sherbrooke*)
3:30	S173	**Implication of major tuber flesh proteins in common scab resistance in Russet Burbank somaclonal variant adapted to thaxtomin A** **Isayenka, I.[*]; N. Beaudoin** (*University of Sherbrooke*)
3:45	S174	**Biosynthesis of the thaxtomin A phytotoxin in the potato common scab pathogen Streptomyces scabies: role of the MbtH-like protein TxtH** **Bignell, D.; Y. Li; J. Liu; D. Adekunle; L. Bown; K. Tahlan** *(Memorial University of Newfoundland*)
4:00	S175	**Transcription regulatory map reveals important transcription factors regulating late blight resistance, leading to a higher accumulation of resistance related metabolites** **Joshi, S.[*1]; R.S. Heikham[1]; A. Gagnon[2]; A. Kushalappa[1]** ([1]*McGill University;* [2]*Progest 2001 Inc.*)
4:15	S176	**Tuber-specific expression of a heterologous host defense peptide reduces post-harvest diseases in potato** **Yevtushenko, D.** (University of Lethbridge)
4:30	S177	**The implications of drought stress on the nutritional quality of potato** **Soolanayakanahally, R.[2]; L. Da Ros[1]; R. Elferjani[2]; S. Kagale[3]; J. Wahab[2]; B. Bizimungu[2]** ([1]*University of British Columbia;* [2]*Agriculture and Agri-Food Canada;* [3]*National Research Council Canada*)
Room 105		**CSA-VI – Breeding and Genetics** *Chair:* ***Andrew Burt*** *(Agriculture and Agri-Food Canada)*
3:15	S178	**Whole genome comparisons of commercial *Phaseolus vulgaris* varieties and interspecific hybrids** **Perry, G.[1]; P.K. Pauls[1]; S. Munholland[2]; Y. Reinprecht[1]; E. Morneau[1]; W. Xie[1]; B. Crosby[2]** ([1]*University of Guelph;* [2]*University of Windsor*)
3:30	S179	**Cultivar classification, major genes, and chromosomal position explain the distribution of genetic diversity in a sample of Canadian bread wheat** **Hargreaves, W.[*1]; C. Pozniak[2]; L. Lukens[1]; A. N'Daiye[2]** [1]*University of Guelph;* [2]*University of Saskatchewan*
3:45	S180	**Tackling pre-harvest sprouting in small grain cereals** **Chen, W-Y[*]; S.K. Kadoll; J. Singh** (*McGill University*)
4:00	S181	**Identification of founding accessions and patterns of relatedness and inbreeding derived from historical pedigree data in a white clover (*Trifolium repens* L.) and red clover (*Trifolium pratense* L.) germplasm collection in New Zealand.** **Egan, L.[*1]; R. Hofmann[1]; B. Barrett[2]; K. Ghamkhar[2]; V. Hoyos-Villegas[3]** ([1]*Lincoln University;* [2]*AgResearch;* [3]*McGill University*)

4:15	S182	**Early flowering epi-mutants of 'Royal' flax.** **Booker, H.[1]; M. House[1]; L. Young[1]; A. Vasudevan[1]; R. Ragupathy[2]; S. Robinson[2]** [1]*University of Saskatchewan;* [2]*Agriculture and Agri-Food Canada*
Room 106		**CBA-IV – Taxonomy and Systematics** *Chair:* ***Anne Bruneau*** *(McGill University)*
3:15	S183	**In praise of larger genera: looking at the Amelanchier-Hesperomeles-Crataegus clade (Rosaceae tribe Maleae)** **Dickinson, T.[1]; R. Ufimov[2]; D. Metsger[1]** ([1]*Royal Ontario Museum;* [2]*Komarov Botanical Institute RAS*)
3:30	S184	**Molecular and morphological data reveal hidden diversity in common North American Frustulia species (Amphipleuraceae)** **Bouchard, A.[1]; P. Hamilton[2]; J. Starr[1]** ([1]*University of Ottawa;* [2]*Canadian Museum of Nature*)
3:45	S185	**Systematics and biogeography in the ecologically conserved pantropical rainforest genus Crudia (Leguminosae)** **Bruneau, A.[1]; B. Domenech[1]; M. de la Estrella[2]; L. Paganucci de Queiroz[3]; R. Barbosa Pinto[4]; C. Snak[3]; R. Steeves[5]** ([1]*Université de Montréal;* [2]*Universidad de Córdoba*; [3]*Universidade Estadual de Feira de Santana;* [4]*Universidade Federal de Goiás*; [5]*Department of Fisheries and Oceans Canada*)
4:00	S186	**Botany and textiles: The Indian Ocean connection** **Metsger, D.** (Royal Ontario Museum)
4:15	S187	**Rapid radiation and complex genome size evolution in a clade of holocentric sedges** **Elliott, T.[*1]; P. Bures[2]; S. Joly[3]; A. Muasya[4]** ([1]*Institut de recherche en biologie végétale;* [2]*Masaryk University;* [3]*Institut de recherche en biologie végétale, Université de Montréal;* [4]*Department of Biological Sciences*)
4:30	S188	**Diversity and evolution of seeds in Cuscuta (dodders, Convolvulaceae): morphology and structure** **Olszewski, M.[*]; M. Costea; H.A.E. Miari** (*Wilfrid Laurier University*)
4:45	S189	**Canadensys: what's new and future directions in biodiversity data publication** **Bruneau, A.; C. Sinou; J. Goimard; L. Brouillet** (*Université de Montréal*)
Room 107		**CBA-V – Biotic Interactions** *Chair:* ***Daya Dayanandan*** *(Concordia University)*
3:15	S190	**Herbivory induced Decadienal deferentially regulates light harvesting complex mRNAs at the level of transcription and mRNA stability in the marine diatom *Phaeodactylum tricornutum*** **Islam, S.[*]; T. Sabharwal; T. Bullock; M. Mehdy** *(University of Texas, Austin*)
3:30	S191	**An antisense oligoRIBO-11 fragment (contact DNA insecticide) penetrates through the integuments into the cells of gypsy moth larvae (*Lymantria dispar* L.)** **Novikov, I[*2]; Oberemok, V[1]; K, Laikova[1]; N. Galchinsky[1]; R. Useinov[1], Y. Plugatar[3]** ([1]*V.I. Vernadsky Crimean Federal University*; [2]*Research Institute of Agriculture of Crimea;* [3]*Nikita Botanical Gardens—National Scientific Centre RAS*)
3:45	S192	**Transcriptomic analysis of red-berried grapevine infected with Grapevine leafroll-associated virus 3** **Song, Y.[*]; B. Meng; R. Hanner** (*University of Guelph)*
4:00	S193	**Isolation and characterization of endophytic microbes in poplar trees antagonistic to stem canker causative pathogenic fungus *Sphaerulina musiva*** **Dayanandan, D.[1]; S. Naik[*1]; A. Tsang[1]; P. Perinet[2]; S. Palys[1]; R. UmaShaanker[3]** ([1]*Concordia University;* [2]*Ministère des Forêts, de la Faune et des Parcs;* [3]*University of Agricultural Sciences)*

4:15	S194	**A biosensor assay (GlnLux) for visualizing symbiotic nitrogen fixation output in root systems involved in the legume–rhizobia symbiosis** **Thilakarathna, M.*; M. Raizada** (*University of Guelph*)
4:30	S195	**The effect of urbanization on the evolution of floral traits in the wildflower *Linaria vulgaris*** **Longley, A.*; C. Caruso** (*University of Guelph*)
Room 108		**CPS-IX – Innovations in Plant Pathology P2 (Student Oral Presentations)** *Chairs:* ***Kenneth Conn*** *(Queen's University)* and ***Tom Fetch*** *(Queen's University)*
3:15	S196	**Monitoring airborne ascospores for the management of white mould (*Sclerotinia sclerotiroum*) in dry bean across Canada** **Reich, J.*[1]; U. Karerwa[2]; S. Chatterton[2]; M. Harding[3]** ([1]*University of British Columbia;* [2]*Agriculture and Agri-Food Canada;* [3]*Agriculture and Forestry*)
3:30	S197	**The prevalence and diversity of Fusarium species causing Fusarium Head Blight on oat in Manitoba** **Tabassum, M.*[1]; M. Banik[2]; M. Beyene[2]; F. Daayf[1]; X. Wang[3]** ([1]*University of Manitoba;* [2]*Agriculture and Agri-Food Canada;* [3]*Morden Research and Development Centre*)
3:45	S198	**'New' pathotypes of *Plasmodiophora brassicae* in Canada are not new** **Sedaghatkish, A.*[1]; M.R. McDonald[1]; B. Gossen[2]** ([1]*University of Guelph;* [2]*Agriculture and Agri-Food Canada*)
4:00	S199	**Assessment of fruit and foliage resistance to bacterial spot (*Xanthomonas gardneri*) in commercial processing tomatoes (Solanum lycopersicum L)** **Simonton, T.*[1]; C. Trueman[1]; D. Robinson[1]; C. Gillard[1]; K. Jordan[2]** ([1]*University of Guelph, Ridgetown Campus;* [2]*University of Guelph*)
4:15	S200	**Management of crown and root rot, caused by *Fusarium oxysporum*, and powdery mildew, caused by *Golovinomyces cichoracearum* on *Cannabis sativa*** **Scott, C.*; Z. Punja** (*Simon Fraser University*)
4:30		**Speakers participate in a panel discussion**
Room 109		**CSPB-XIV – Nutrients, Biotic and Environmental Interactions** *Chair:* ***Frederique Guinel*** *(Wilfred Laurier University)*
3:15	S201	**Nutrients requirements of flax** **Sahota, T.** (LUARS Lakehead University Thunder Bay)
3:30	S202	**Quantifying the effects of a carbonatite rock fertilizer on wheat (*Triticum aestivum* L.)** **Jones, J.*[1]; P. Antunes[2]; F. Guinel[1]** ([1]*Wilfrid Laurier University;* [2]*Algoma University*)
3:45	S203	**The effects of nutrient enrichment on the community composition of arbuscular mycorrhizal fungi: a meta-analysis of fertilization studies** **MacColl, K.; H. Maherali** (*University of Guelph*)
4:00	S204	**Endophytic bacteria: nitrogen-source for lodgepole pine trees on disturbed sites?** **Padda, K.P.*; A. Puri; C. Chanway** (*University of British Columbia*)
4:15	S205	**Cucurbit seeds: Reservoirs of functional and antagonistic microbiomes** **Khalaf, E.; M. Raizada** (*University of Guelph*)
4:30	S206	**Environmental factors and polyketide synthase gene expression in an usnic acid producing lichen-fungus** **Gunawardana, D.*; N. Sveshnikova[2]; M.D. Piercey-Normore[2]** ([1]*Memorial University;* [2]*Grenfell Campus, Memorial University*)

MacNaughton MACN Room 113		CSPB-XV – Biochemistry and Metabolism *Chair: **Wayne Sneddon** (Queen's University)*
3:15	S207	**Arabidopsis CTP:phosphocholine cytidylyltransferase is phosphorylated and inactivated by SnRK1** **Chen, G.; K. Caldo; Y. Xu; K. Jayawardana; L. Falarz; J. Acedo** (*University of Alberta*)
3:30	S208	**Identifying sequences required to piggyback AtADT5 into the nucleus** **Clayton, E.*; S. Abolhassani Rad; S. Kohalmi; M. Smith-Uffen** (*The University of Western Ontario*)
3:45	S209	**Evolutionary insights into the role of shikimate kinase-like 1 in chloroplast biogenesis** Kanaris, M.*; D. Christendat; J. Lee (*University of Toronto*)
4:00	S210	**Investigating quinate metabolism** Gritsunov, A.*; D. Christendat (*University of Toronto*)
4:15	S211	**Autophosphorylation inhibits the Ca2+-dependent protein kinase RcCDPK1 from developing castor oil seeds** **Kilburn, R.*; W. Plaxton; W. Snedden** (*Queen's University*)
4:30	S212	**Recent advances in plant ubiquinone (Coenzyme Q) biosynthesis and engineering** **Soubeyrand, E.[1]; T. Johnson[1]; S. Latimer[1]; A. Bernert[1]; M. Kelly[1]; J. Kim[1]; T. Colquhoun[1]; A. Block[2]; G. Basset[1]** ([1]*University of Florida;* [2]*USDA*)

5:00 – 7:00 Poster Session 2 at Peter Clark Hall,
Located downstairs in the University Center.

Students that have a poster with an EVEN number are to remain by their posters until judged.

Beverages will be served.

Poster Program

Odd-numbered & even-numbered posters are presented Monday & Tuesday evening, respectively. Posters are not numbered according to the ID# assigned during abstract submission; use Topics 1-25 below as a guide to find your new poster number. The presenter's name is underlined, and student presenters being considered for poster awards are shown by an asterisk (*). Students being considered for poster awards will be interviewed during the evening poster sessions that begin at 5:00 pm in **Peter Clark Hall (PCH)**.

TOPIC 1: Abiotic Stress (Posters P1-P24)

P1	**Photoperiodic injury in tomato involves opposing short-term and long-term acclimation of photosystem II operating efficiency and chlorophyll levels** Marie T.R.J.G.*; B. Grodzinski; B.J. Micallef (*University of Guelph)*
P2	**Superoxide is diurnally rhythmic and dampens under continuous light in tomato** Marie T.R.J.G.*; M.C. Micallef; B. Grodzinski; B.J. Micallef (*University of Guelph)*
P3	**Effects of exogenous melatonin on improving the drought resistance of oat seedlings** Chen, S. (Southwest Minzu University)
P4	**Wounding induces tomato Ve1 R-gene expression** R. Nazar[1]; Castroverde, C.[1]; X. Xu[1]; A. Kurosky[2]; E. Robb[1] ([1]*University of Guelph;* [2]*University of Texas Medical Branch*)
P5	**High temperature and ovule failure in field pea (*Pisum sativum* L.)** Osorio, E*; A. Davis; R. Bueckert *(University of Saskatchewan)*
P6	**Expression of the RING-type ubiquitin ligase, XBAT35, is regulated by ABA and abiotic stress** Serio, R.*; Q. Li; A. Schofield; S. Stone *(Dalhousie University*)
P7	**Unravelling the aspects of PGPR-mediated modulation of antioxidative defense expression and secondary metabolic profiling in *Solanum lycopersicum* under Cd stress** Khanna, K.*; P. Ohri; R. Bhardwaj (*Guru Nanak Dev University, Amritsar*)
P8	***Brassica rapa* Serine/Arginine-rich protein-like 3 (BrSR-like 3) regulates drought tolerance via alternative splicing of target genes in a concentration-dependent pathway** Lee, S.; M. Muthusamy; J. Kim; M. Jeong (*National Institute of Agricultural Sciences*)
S9	**Bioactive compounds in salt-stressed *Hypericum perforatum*: role of proline, salicylic acid and ascorbic acid pretreatments** Renault, S.[1]; S. Alinian Joozdani[2]; J. Razmjoo[2]; F. Daayf[1]; L. Adam[1] ([1]*University of Manitoba;* [2]*Shakhekord University*)
P10	**Conditioning of nursery plants using irrigation scheduling and mycorrhizae for improving post-transplant success rates** Keary, K.*; T. Graham; M. Dixon (*University of Guelph*)
P11	**Addition of sulfur decreases total cadmium uptake but increases cadmium translocation in soybean** S. Matt; P. Boersma; Macfie, S. (*University of Western Ontario*)
P12	**Impacts of root-associated fungi on tree growth under elevated temperature and CO_2** Frank, J.*[1]; D. Way[2]; T. Ramsfield[3]; M. Abou-Zaid[1] ([1]*Western University;*[2]*University of Western Ontario;*[3]*National Resources Canada*)
P13	**Characterization of the role of SPL9 in drought stress tolerance in *Medicago sativa*** Hanly, A.*[1]; L. Amyot[2]; J. Karagiannis[1]; A. Hannoufa[2] ([1]*University of Western Ontario;* [2]*Agriculture and Agri-Food Canada)*

P14	**Exposure to low phosphate and salinity differentiate root systems for two ecotypes of the extremophyte crucifer *Eutrema salsugineum*** Irani, S.; P. Summers; E. Weretilnyk (*McMaster University*)
P15	**Molecular and biochemical assessment of mechanisms driving abiotic stress tolerance in *Medicago sativa* subsp. falcata** Singer, S.[1]; R. Orlando[1]; G. Dhariwal[1]; K. Burton Hughes[1]; A. Hannoufa[2]; E. Schultz[3]; S. Acharya[1] ([1]*Agriculture and Agri-Food Canada;* [2]*Agriculture and Agri-Food Canada;* [3]*University of Lethbridge*)
P16	**RNAi-mediated down-regulation of stress-response regulators in alfalfa for the improvement of abiotic stress tolerance** Singer, S.[1]; U. Subedi[1]; G. Dhariwal[1]; K. Burton Hughes[1]; G. Chen[2]; S. Acharya[1] ([1]*Agriculture and Agri-Food Canada;* [2]*University of Alberta*)
P17	**Investigating the relationship of HD2 family histone deacetylases in response to drought stress in Arabidopsis thaliana** Tahir, M.[*1]; J. Karagiannis[1]; L. Tian[2] ([1]*University of Western Ontario;* [2]*Agriculture and Agri-Food Canada*)
P18	**Genetic variation for yield formation traits affecting drought tolerance in commercial soybean [*Glycine max* (L.) Merr.] varieties adapted to Ontario** Gebre, M.G.[*]; H. Earl (*University of Guelph*)
P19	**Temporal shifts in oxidative stress and fermentative metabolites are associated with physiological injuries in postharvest pear fruit** E. Flaherty[1]; G. Lum[1]; J. DeEll[2]; S. Subedi[3]; B. Shelp[1]; Bozzo, G.[1] ([1]*University of Guelph;* [2]*Ontario Ministry of Agriculture, Food and Rural Affairs* [3]*Binghamton University-State University of New York*)
P20	**A novel method for irrigating plants, tracking plant water use and imposing water deficits on plants grown in artificial environments** Bruch, A.[*]; H. Earl (*University of Guelph*)
P21	**Screening for heat stress resistant genotypes and evaluating heat stress effect on yield in hard red spring wheat when exposed to heat stress during flowering** Abeysingha, D.[*]; J. Ozga; D. Spaner; D. Reinecke (*University of Alberta*)
P22	**Expression and localization of the Arabidopsis thaliana HOTHEAD protein in response to stress.** Francom, T.[*]; S. Lolle (*University of Waterloo*)
P23	**Analysis of Abscisic acid (ABA) accumulation stressed and non stressed Brassicaceae plants** Hussain, S.[*]; E. Nambara; Z. Xu; F. Nguyen (*University of Toronto)*
P24	**The Drought Response Syndrome: A complex response mediated by water deficit severity and time** Chen, R.[*]; J. Sangiovanni; O. Wilkins (*McGill University*)

TOPIC 2: Agronomic Crop Production (Posters P25-P29)

P25	**Performances of early and late maturing oat varieties in cold regions, China** Zhou, Q. (Southwest Minzu University)
P26	**Yield stability of Canada Western Spring wheat under organically managed systems** Kubota, H.[1]; D. Spaner[2]; M. Iqbal[2] ([1]*Government of Canada;* [2]*University of Alberta*)
P27	**What are the critical phenological periods in the annual development of intermediate wheatgrass for sustainable perennial grain production?** Cattani, D.[1]; O. Duchene[2]; F. Celette[2]; C. David[2] ([1]*The University of Manitoba;* [2]*Agropole-ISARA*)

P28	**Effect of different colour rays on germination and mycoflora associated with maize caryopses** Niaz, I. (Pakistan Agriculture Research Council)
P29	**Phosphorus (P) and potassium (K) management in corn-soybean-winter wheat crop rotation in a long term experiment** Hanzra, H.[*1]; D. Hooker[1]; L. Van Eerd[2]; I. O'Halloran[1]; H. Bohner[3] ([1]*University of Guelph;* [2]*University of Guelph Ridgetown Campus;* [3]*OMAFRA*)

TOPIC 3: Agronomic Cropping Systems & Soil Management (Posters P30-P40)

P30	**Lentil enhances the productivity and stability of oilseed-cereal cropping systems** K. Liu[1]; E. Johnson[2]; R. Blackshaw[1]; Gan, Y.[1] ([1]*Agriculture and Agri-Food Canada;* [2]*University of Saskatchewan*)
P31	**Pulse-cereal rotation affects soil carbon and the stability of system productivity** K. Liu[1]; M. Bandara[2]; Gan, Y.[1] ([1]*Agriculture and Agri-Food Canada;* [2]*Alberta Agriculture and Forestry*)
P32	**Soil N gain from fall harvest to spring planting in soils under pulses, mustard and wheat** L. Luan[1]; M. Bandara[2]; M. St.Luce[1]; Gan, Y.[1] ([1]*Agriculture and Agri-Food Canada;* [2]*Alberta Agriculture and Forestry*)
P33	**Improving corn N fertilizer recommendations using rainfall effects on crop N demand** Niemeyer, C.[*]; J. Nasielski; K. Janovicek; B. Deen (*University of Guelph*)
P34	**Abiotic and biotic responses to cover crops and soil amendments in a vineyard** Vanvolkenburg, H.[1*]; F. Guinel[2]; L. Vasseur[1] ([1]*Brock University;* [2]*Wilfrid Laurier University)*
P35	**Using species and genetic diversity to address stand establishment issues in red clover (*Trifolium pratense*) as a Cover Crop** Hilker, B.[*]; E. Lee; B. Deen; F. Tardif (*University of Guelph*)
P36	**Common bean cultivar mixtures and crop productivity** Reinprecht, Y.; L. Schram; T. Smith; P. Pauls (*University of Guelph*)
P37	**Exploring the potential of implementing pollinator friendly cover crop species in Southern Ontario.** Radcliffe, K.[*]; E. Lee; M. Raizada; B. Deen; N. Raine (*University of Guelph*)
P38	**Stubble affects genetic potential for inorganic nitrogen cycling by root associated microbiomes of oilseed crops** Wang, L.[1]; Y. Gan[2]; L. Bainard[3]; C. Hamel[2]; M. St-Arnaud[4]; M. Hijri[1] ([1]*Université de Montréal and Jardin botanique de Montréal* [2]*Agriculture and Agri-Food Canada;* [3]*Swift Current Research and Development Centre* [4]*Université de Montréal and Jardin botanique de Montréal, Montréal*)
P39	**Testing amendments and cover crops for improving soil health in vineyards** R. Christie[1]; R. Honor[1]; L. Vasseur[2]; Guinel, F.[1] ([1]*Wilfrid Laurier University;* [2]*Brock University*)
P40	**Strike against Pseudomonas syringae: rye cover crop promotes a shift in squash phyllosphere bacterial abundance and plant gene expression** Maglione, R.[*1]; M. Ciotola[2]; M. Cadieux[2]; V. Toussaint[2]; M. Laforest[2]; S. Kembel[3] ([1]*UQAM;* [2]*Agriculture and Agrifood Canada;* [3]*Université du Québec à Montréal (UQAM)*)

TOPIC 4: Biochemistry, Metabolism, Photosynthesis (Posters P41-P68)

P41	**A central role for polyprenol reductase in plant dolichol biosynthesis** Van Gelder, K.*; L. Virta; T. Akhtar (*University of Guelph*)
P42	**Cytochrome P450 and O-methyltransferase catalyze the final steps in the biosynthesis of the anti-addictive alkaloid ibogaine from Tabernanthe iboga** Farrow, S.; M. Kamileen; S. O'Connor (*The John Innes Centre*)
P43	**Do r2r3-myb transcription factors directly regulate suberin biosynthesis?** Garant, T.*; O. Rowland; J. Murmu (*Carleton University*)
P44	**Processing strategies to reduce the level of acrylamide formation in potato chips, and their influence on reducing sugar and asparagine concentrations** Liyanage, D.[1]; D. Yevtushenko[1]; M. Konschuh[2]; B. Bizimungu[3]; Z. Lu[3] ([1]*University of Lethbridge;* [2]*Alberta Agriculture and Forestry;* [3]*Agriculture and Agri-Food Canada*)
P45	**Roadmap to potato suberin: an RNAseq approach** Bernards, M.; K. Woolfson (*The University of Western, Ontario*)
P46	**Roadmap to potato suberin: an RNAseq approach** Bernards, M.; K. Woolfson (*The University of Western Ontario*)
P47	**Post-translational modification in the regulation of starch branching enzyme 2.2 from *Arabidopsis thaliana*** MacNeill, G.*; I. Tetlow; M. Emes (*University of Guelph*)
P48	**Natural variation in glucosinolate profiles in *Camelina sativa* and its wild relative** Amyot, L.; A. Hannoufa; T. McDowell; J. Renaud (*Agriculture and Agri-Food Canada*)
P49	**Quality aspects of cooked early potatoes in relation to polyphenols/antioxidant content using a new LC-MS/MS technique (method development and application)** Varilla, C[1, 2]*, R.G. Pinhero[1], R.Y. Yada[3] and M. F. Marcone[1] ([1]Department of Food Science, University of Guelph [2]AFL – Laboratory Services Division-University of Guelph [3]Faculty of Land and Food Systems, University of British Columbia)
P50	**Are sensory attributes of potatoes affected by the polyphenol contents?** Varilla, C[1, 2]*, R.G. Pinhero[1], M. F. Marcone[1] and R.Y. Yada[3] [1]Department of Food Science, University of Guelph [2]AFL – Laboratory Services Division-University of Guelph [3]Faculty of Land and Food Systems, University of British Columbia
P51	**Isoflavonoid metabolon and arogenate dehydratases in soybean (*Glycine max*): Identification and Functional Characterization** Sirjani, R.*[1]; K. Pannunzio[1]; S. Kohalmi[1]; S. Dhaubhadel[2] [1]*The University of Western Ontario;* [2]*Agriculture and Agri-Food Canada*
P52	**Photoacclimation to high-light in *Chlamydomonas reinhardtii* during senescence relies on generating high-quenching centres at detached antenna** E. Meagher; P. Rangsrikitphoti; B. Faridi; D. Durnford (*UNB*)
P53	**Investigating high acetate as a regulator of senescence in *Chlamydomonas reinhardtii*** Lee, C.*[1]; D. Durnford[2] ([1]*University of New Brunswick;* [2]*UNB)*
P54	**Establishing a link between flavonol catabolism and auxin-mediated stem growth** J. Roepke; Bozzo, G. (*University of Guelph*)
P55	**Interactions between starch biosynthetic enzymes and 14-3-3 adaptor proteins in maize endosperm** Carswell, M.*; I. Tetlow; M. Emes (*University of Guelph*)

P56	**Functional characterization of *Arabidopsis thaliana* HXXXD-motif (BAHD) acyltransferases involved in suberin metabolism** Queralta Castillo, I.[*1]; I. Molina[2]; M. Bernards[1] ([1]*The University of Western Ontario;* [2]*Algoma University*)
P57	**Understanding the regulatory role of rbcL RNA S1-Binding domain (RLSB) protein in the single-cell C4 species *Bienertia sinuspersici*** Yogadasan, N.[*]; S. Chuong (*University of Waterloo*)
P58	**Biochemical evidence for flavonol α-rhamnosidase activity in plants** Unterlander, N.[*]; H. Gordon; L. McGary; G. Bozzo (*University of Guelph*)
P59	**Genomic, chemical and functional analysis of adult leaf cuticle development in maize** Molina, I.[1]; R. Bourgault[1]; P. Qiao[2]; S. Matschi[3]; M. Vasquez[3]; A. Sonntag[1]; C. Charlebois[1]; M. Mohammadi[1]; M. Gore[2]; M. Scanlon[2]; L. Smith[3] ([1]*Algoma University;* [2]*Cornell University;* [3]*University of California San Diego*)
P60	**The role of starch in the development, physiology, and reproduction of *Arabidopsis thaliana*** Costain, C.[*]; M. Emes; I. Tetlow (*University of Guelph*)
P61	**Characterizing a novel protein targeting mechanism to the outer envelope of chloroplasts** Overton, A.[*1]; S. Chuong[1]; M. Smith[2] ([1]*University of Waterloo;* [2]*Wilfrid Laurier University*)
P62	**Exploring the role of the purple acid phosphatase AtPAP17 in Arabidopsis phosphate and ROS metabolism** O'Gallagher, B.[*] (Queen's University)
P63	**Investigating post-translational regulation of UDP-Glucose pyrophosphorylase in maize endosperm** Butler, V.; I. Tetlow (*University of Guelph*)
P64	**Investigating the functional evolution of plant shikimate kinase-like 1 (SKL1) in *Marchantia polymorpha*** Lee, J.[*]; M. Kanaris; D. Christendat (*University of Toronto*)
P65	**Distinct metabolic modes drive variation in cyclic and acyclic monoterpenoid biosynthesis in *Pelargonium graveolens* chemotypes** Bergman, M.[*]; M. Phillips (*University of Toronto – Mississauga*)
P66	**Mapping metabolic carbon partitioning in Arabidopsis rosette tissue using $^{13}CO_2$ labeling and ammonia chemical ionization mass spectrometry** M. Phillips; Davis, B.[*] (*University of Toronto – Mississauga*)
P67	**Enhancing yield and biomass in canola by modifying carbohydrate metabolism** Wang, L.; Y. Wang; A. Makhmoudova; I. Tetlow; M. Emes (*University of Guelph*)
P68	**Recent advances in plant ubiquinone (Coenzyme Q) biosynthesis and engineering** Soubeyrand, E.[1]; T. Johnson[1]; S. Latimer[1]; A. Bernert[1]; M. Kelly[1]; J. Kim[1]; T. Colquhoun[1]; A. (Block[2]; G. Basset[1]; [1]*University of Florida;* [2]*USDA*)

TOPIC 5: Bioinformatics and Systems Biology (Posters P69-P73)

P69	**Custom selected reference genes outperform pre-defined reference genes in transcriptomic analysis** Goncalves dos Santos, K.[*]; I. Desgagné-Penix; H. Germain (*Université du Québec à Trois-Rivières*)
P70	**Redundancy removal in de novo transcriptomes of Piper nigrum (black pepper)** Doering, M.[*]; J. Stout (*University of Manitoba*)

P71	**Using interactome and ubiquitinome datasets to identify substrates for Arabidopsis RING-type ubiquitin ligases (E3s) and the ubiquitin system** D. Alotaibi; J. Yang; L. Hongxia; Stone, S. (*Dalhousie University*)
P72	**Transcriptional control of bacterial cell division in a nitrogen fixing symbiosis** M. D'Alessio; J. Cheng; A. Doxey; Charles, T. (*University of Waterloo*)
P73	**Expansion and diversification of the CCA1-LHY-RVE transcription factor family in monocots** Gélinas Bélanger, J.*; J. Sangiovanni; J. Singh; O. Wilkins (*McGill University*)

TOPIC 6: Bioproduct Production in Plants (Posters P74-P80)

P74	**Seed yield and oil and protein contents of main oilseed crops on the Canadian prairie** Z. Hossain[1]; E. Johnson[2]; R. Blackshaw[3]; Gan, Y.* ([1]*Swift Current Research and Development Centre;* [2]*University of Saskatchewan;* [3]*Agriculture and Agri-Food Canada)*
P75	**Plant-made virus-like particles for protection of piglets against porcine epidemic diarrhea virus** Zhu, H.[1]; Z. Khamis[2]; R. Menassa[3] [1]*Agriculture and Agri-Food Canada;* [2]*University of Western Ontario;* [3]*Government of Canada*
P76	**A rationally designed plant-produced IgA has improved yield and exhibits cross serotype protection against enterohemorrhagic Escherichia coli** Chin-Fatt, A.*[1]; R. Menassa[2] ([1]*Western University;* [2]*Government of Canada*)
P77	**Expression of malaria antigens in the chloroplast of *Chlamydomonas reinhardtii*; the first step towards developing malaria algae-based oral vaccine candidates** Shamriz, S.*[1]; H. Ofoghi[2] ([1]*University of Western Ontario;* [2]*Iranian Research Organization for Science and Technology*)
P78	**The effects of nutrient solution pH on protein expression and morphology of Agrobacterium-infiltrated Nicotiana benthamiana in hydroponic growth conditions** Bennett, L. (Univeristy of Guelph)
P79	**Recombinant protein expression in plants: The key influence of basic growth conditions** L. Shang; M. Goulet; Michaud, D. (*Université Laval*)
P80	**Identification of candidate cinnamyl alcohol dehydrogenases in Tabernanthe iboga root** McDonald, K.*; M. Kapasi; J. Stout (*University of Manitoba)*

TOPIC 7: Breeding and Genetics (Posters P81-P98)

P81	**Peduncle Strength: a potential selection criterion to improve lodging tolerance in Oat** Nakhforoosh, A.; J. Mitchell Fetch; S. Kumar (*Government of Canada*)
P82	**Soybean protein content variation among genotypes grown in Morden, MB and Ottawa, ON** Hou, A.[1]; E. Cober[2] ([1]*Agriculture and Agri-Food Canada;* [2]*AAFC Ottawa-RDC*)
P83	**Spring wheat breeding for eastern canada – challenges and opportunities** Burt, A.; X. Wang; A. Cummiskey; D. MacEachern; H. Voldeng *(Agriculture and Agri-Food Canada)*
P84	**Assessment of genetic structure of coleoptile length in spring wheat (Triticum aestivum L.) using a genome-wide association study** Khadka, K.*; M. Kaviani; A. Navabi (*University of Guelph*)

P85	**Identification and mapping of an unknown resistant locus in *Brassica napus* against Leptosphaeria maculans** Liu, F.; Z. Zou; D. Fernando (*University of Manitoba*)
P86	**Validation and discovery of genetic markers associated with loose smut resistance genes in a durum wheat (*Triticum durum* L.) doubled haploid population DT676/DT802** Bokore, F.[1]; A.G. Sharpe[3]; E. Sari[4] ; K. Boyle[4]; B. Meyer[1]; I. Piche[1]; R. Knox[1]; Y. Ruan[1]; R. Cuthbert[1]; H. Campbell[2] ([1]*AAFC;* [2]heather.campbell3@canada.ca*;* [3]*Global Institute for Food Security;* [4]*National Research Council of Canada*)
P87	**Leaf rust resistance genes in Canadian wheat cultivars Red Fife, Stettler, Vesper, Lillian, Carberry and AC Cadillac** McCallum, B.[1]; F. Bokore[2]; R. Cuthbert[2]; R. Knox[2] ([1]*Agriculture and Agri-Food Canada;* [2]*AAFC*)
P88	**Genetic analysis and molecular mapping of the oat crown rust seedling resistance gene Pc39** J. Zhao[1]; A. Kebede[1]; Menzies, J.[2]; N. Tinker[3]; C. McCartney[1] [1]*Morden Research and Development Centre;* [2]*Agriculture and Agri-Food Canada;* [3]*Ottawa Research and Development Centre*
P89	**Genetic diversity of grain fatty acid composition in 295 accessions of Korean Rice Core Set** J. Yang[1]; B. Ha[1]; S. Noh[1]; S Eom[1]; S. Chu[2]; K. Kim[2]; Y. Park[2]; Lee, Y.[3] ([1]*Soochunhyang University;* [2]*Kongju National University;* [3]*Soonchunhyang University*)
P90	**Regression data driven models on canopy hyperspectral reflectance for soybean yield prediction** Yoosefzadeh Najafabadi, M.[*]; M. Eskandari (*University of Guelph*)
P91	**Major genomic regions underlying seed size, protein and sucrose in food-grade soybeans** Torabi, S.[*]; R. Whaley; M. Eskandari (*University of Guelph*)
P92	**Mapping cold hardiness in tetraploid garden roses (Rosa x hybrida)** Rouet, C.[*1]; E. Lee[1]; K. Tanino[2]; D. Somers[3] ([1]*University of Guelph;* [2]*University of Saskatchewan;* [3]*Vineland Research and Innovation Centre*)
P93	**Genome-wide analysis of thaumatin-like proteins in cereals** Iqbal, I.[*]; R. Tripathi; O. Wilkins; J. Singh (*McGill University*)
P94	**Agronomic performance and nitrogen fixation of heirloom and conventional dry bean varieties under low-nitrogen field conditions** Wilker, J[*1]; A. Navabi[1]; I. Rajcan[1]; F. Marsolais[2]; B. Hill[2]; D. Torkamaneh[3]; P. Pauls[1] ([1]*University of Guelph;* [2]*Agriculture Agri-food Canada;* [3]*Université Laval*)
P95	**Genetic transformation of oat to elucidate a gene associated with beta-glucan** Fatmawati, A.[*1]; M. Mahmoud; T. Donoso; W. Chen[1]; R. Kaur; N. Tinker[2]; J. Singh[1] ([1]*McGill University;* [2]*Agriculture and Agri-food Canada)*
P96	**Identification of five QTLs for clubroot resistance to three novel pathotypes of Plasmodiophora brassicae in *Brassica oleracea* through genotyping-by-sequencing** Karim, M.[1]; F. Fuyou[1]; A. Dakouri[1]; S. Strelkov[2]; B. Gossen[1]; G. Peng[1]; F. Yu[1] ([1]*Agriculture and Agri-Food Canada;* [2]*University of Alberta)*
P97	**Evaluation of tissue culture and cloning propagation efficiencies of three industrial hemp varieties** El-Mezawy, A.; J. Slaski (*InnoTech Alberta*)
P98	**Characterization of nested association mapping population in dry bean** Vazin, M.[*]; T. Smith; K.P. Pauls (University of Guelph)

TOPIC 8: Cell Biology (Posters P99-P109)

P99	**Characterization of the pokeweed antiviral protein (PAP) interactome by proximity-dependent biotin identification** Chivers, J.*; K. Hudak (*York University*)
P100	**Understanding differential development and behaviour of plastids using the Arabidopsis immutans mutant** Burnside, M.*; K. Barton; N. Mathur; J. Mathur (*University of Guelph*)
P101	**Investigating the systematic regulation and function of cyclic nucleotide-gated channels in arabidopsis** Miraples, A.*; W. Moeder; Y. Keiko (*University of Toronto*)
P102	**Identification and characterization of new lipid droplet proteins in Arabidopsis thaliana** Doner, N.*[1]; F. Kretzschmar[2]; T. Ischebeck[2]; K. Chapman[3]; J. Dyer[4]; R. Mullen[1] ([1]*University of Guelph;* [2]*University of Goettingen;* [3]*University of North Texas;* [4]*U.S. Department of Agriculture–Agricultural Research Service*)
P103	**Regulation of cell size in *A. thaliana* shoot apical meristem** Echevin, E.*; A. Routier-Kierzkowska; P. Belska; D. Kierzkowski *(Institut de Recherche en Biologie Végétale - Université de Montréal*)
P104	**A feedback loop modulates root apical meristem development** L. Halat; J. Rever; M. Law; Wasteneys, G. (*The University of British Columbia*)
P105	**Investigating the role of e3 ubiquitin ligases in the Brassicaceae self-incompatible pollen response** Beronilla, P.*; D. Goring (*University of Toronto*)
P106	**Characterization of *Camelina sativa* germination: The effect of gibberellins on vacuolation** Gomes, M.*; E. Nambara (*University of Toronto*)
P107	**A novel method of producing the putative c-terminal transit peptide of attoc159 for characterization of its targeting to the chloroplast outer membrane** Fish, M.*[1]; M. Jelokhani-Niaraki[1]; S. Chuong[2]; M. Smith[1] ([1]*Wilfrid Laurier University;* [2]*University of Waterloo*)
P108	**Investigating protein localization to the outer membrane of chloroplasts** Nash, D.*[1]; M. Smith[2]; S. Chuong[1] ([1]*University of Waterloo;* [2]*Wilfrid Laurier University*)
P109	**Characterizing the role of *Striga hermonthica* gibberellic acid receptors** Adityani, C.*; T. Pender; S. Lumba; P. McCourt (*University of Toronto*)

TOPIC 9: Controlled-Environment Crop Production (Posters P110-P113)

PS110	**Elongation and flowering promoted by blue light are independent of photoperiod: a comparison with red light in four bedding plant species** Zheng, Y.; Y. Kong; D. Kamath *(University of Guelph)*
P111	**Blue light can promote flowering of bedding plants when associated with low phytochrome activity** Kong, Y.; K. Schiestel; Y. Zheng (*University of Guelph*)
P112	**NLOS-OG: A nitrogen simulation tool for managing organic greenhouses** Dion, P.*[1]; M. Thériault[2]; D. Hunt[2]; S. Bittman[2]; S. Pepin[1]; M. Dorais[1] ([1]*Laval University;* [2]*Agriculture and Agrifood Canada*)
P113	**Minimizing unwanted callus during *in vitro* multiplication of daylilies** Callaghan, J.*; M. Jones (*University of Guelph*)

TOPIC 10: Crop Physiology (Poster P114)

P114	**Investigation of the critical growth period for yield component determination in quinoa** McCabe, J.; H. Earl (*University of Guelph*)

TOPIC 11: Development and Reproduction (Posters P115-P119)

P115	**The effect of hermaphroditism versus cross-pollination on sex ratios and genetic variation in *Cannabis sativa* L.** Holmes, J.[*]; Z. Punja (*Simon Fraser University*)
P116	**Characterizing and understanding the underlying molecular mechanism of the sugarcane anti-florigen ScFT2** Lesy, V.[*1]; M. Minow[1]; C. Coelho[1]; Z. Xu[1]; Z. Leblanc[1]; S. Rothstein[1]; A. Chalfun Junior[2]; J. Colasanti[1] ([1]*University of Guelph;* [2]*Universidade Federal de Lavras*)
P117	**Investigating the role of secretion in the *Arabidopsis thaliana* compatible pollen response pathway** Macgregor, S.[*]; D. Goring (*University of Toronto*)
P118	**POPCORN modulates auxin flow and polarity to define adaxial-abaxial cell fate in Arabidopsis leaf development** Quilichini, T.; P. Gao; R. Datla; D. Xiang (*National Research Council Canada*)
P119	**Investigating the role of BKNs in pollen-stigma interactions** Geng, B.[*1]; J. Doucet[2]; D. Goring[1] ([1]*University of Toronto;* [2]*U of T*)

TOPIC 12: Diagnostic Tools Applied to Crop Production (Poster P120)

P120	**Laboratory testing of qPCR assays designed in silico reveal promising results to rapidly identify phytopathogenic Tilletia species.** Tremblay, E[*1]; D. Shearlaw[2]; H. Nguyen[1]; G. Bilodeau[2]; S. Hambleton[1] ([1]*Agriculture and Agri-Food Canada;* [2]*Canadian Food Inspection Agency*)

TOPIC 13: Ecology and Ecophysiology (Posters P121-P133)

P121	**Short-term effects of partial and clearcuttings on woody debris and understory vegetation in mixed-wood stands** Maleki, K.[*1]; B. Lafleur[1]; B.D. Harvey[1]; M. Mazerolle[2]; N. Fenton[3] ([1]*University of Quebec in Abitibi-Temiscamingue;* [2]*Université Laval* [3]*Université du Québec en Abitibi-Témiscamingue (UQAT)*)

P122	**Competition or facilitation: Examination of interactions between endangered *Sida hermaphrodita* and invasive *Phragmites australis*** Mulholland, S.*; M. Costea; K. Stevens (*Wilfrid Laurier University*)
P123	**The interaction of marine phytoplankton cell size with capacities for reactive oxygen detoxification** Rehman, A.*; D. Campbell (*Mount Allison University*)
P124	**Assessing threats and mitigation for Scarlet Ammannia (*Ammannia robusta*) in Southwestern Ontario** Salive, K.*; M. Costea; K. Stevens (*Wilfrid Laurier University*)
P125	**Assisted migration of whitebark pine to higher latitudes and elevations in the Canadian Cordillera** S. Haeussler; L. Tackaberry; Massicotte, H. (*University of Northern British Columbia*)
P126	**Below-ground facilitation between tree species in the re-vegetalization of a degraded site** Pawuluwage, S.*[1]; P. Marchand[1]; N. Fenton[1]; M. Roy[2]; B. Lafleur[1] ([1]*Université du Québec en Abitibi-Témiscamingue (UQAT);* [2]*Université Paul Sabatier – CNRS*)
P127	**Is it possible to predict precipitation with readily available precipitation records?** Schellenberg, M.; H. Cutforth; J. Nimegeers (*Swift Current Research and Development Centre)*
P128	**Exogenous ethylene increases methane emissions from canola** A. Martel[1]; Qaderi, M.[1,2] ([1]*Saint Mary's University;* [2]*Mount Saint Vincent University*)
P129	**An analysis of invasive species management in the Niagara region of Ontario, Canada: establishment of a database to improve knowledge sharing** Vasseur, L.; L. Brown (*Brock University*)
P130	**Performance of Eastern white pine (*Pinus strobus* L.) at the limits of its distribution range in Western Newfoundland.** Sveshnikov, D.[1]; A. Arsenault[2]; N. Lake[1]; V. Valdez[1]; P. Baines[2]; R. LeBlanc[2]; K. Beals[1]; R. Skinner[1] ([1]*Grenfell Campus, Memorial University of Newfoundland;* [2]*Canadian Forest Service*)
P131	**Cold spring delays autumn senescence, elongates nutrient uptake period, but reduces nitrogen storage for winter in *Rhynchospora alba* (Cyperaceae)** K. Byne; Ryser, P. (*Laurentian University*)
P132	**Effects of drought, plant hormones and arbuscular mycorrhizal fungi on photosynthesis, transpiration and plant growth in corn (*Zea mays*)** Singh, S.; M. Fu (*University of British Columbia, Canada)*
P133	**Seasonal changes in photosynthesis, transpiration and chlorophyll levels in American Sweetgum (*Liquidambar styraciflua*) and Hungarian Oak (*Quercus frainetto*) and Japanese Katsura (*Cercidiphyllum japonicum*)** Singh, S.; G. Bhatt; A. Jimenez (*University of British Columbia, Canada*)

TOPIC 14: Entomology and Pest Management (Posters P134-P135)

P134	**Plastid transformation of Micro-tom tomato for RNAi interference in insects** Kaplanoglu, E.[1]; I. Kolotilin[2]; R. Menassa[3]; C. Donly[1] ([1]*Agriculture and Agri-Food Canada;* [2]*Scattered Gold Biotechnology Inc.;* [3]*Government of Canada*)

P135	**Modulation of lipopeptides production by Bacillus subtilis PTB185 in response to different plant pathogens** Cossus, L.[*1]; F. Roux-Dalvai[2]; I. Kelly[2]; T. Nguyen[2]; H. Antoun[2]; A. Droit[2]; R. Tweddell[2] ([1]*Laval university;* [2]*Université Laval*)

TOPIC 15: Growth Regulators (Posters P136-P137)

P136	**Karrikins: important regulators of seed germination in wildfire-prone regions** Monthony, A.[*1]; K. Baethke[2]; L. Erland[2]; S. Murch[2] ([1]*University of Guelph;* [2]*UBC*)
P137	**Indoleamine plant growth regulators perceive and initiate plant responses to specific light spectra in Scutellaria species** Forsyth, J.[*1]; L. Erland[2]; S. Murch[2] ([1]*University of British Columbia;* [2]*UBC*)

TOPIC 16: Horticultural Field Production (Posters P138-P139)

P138	**Remote assessment of phenological and phenotypic variability in wild blueberry fields** Anku, K.; D. Percival (*Dalhousie University*)
P139	**Evaluation of bottle and luffa gourds for commercial production in Canadian greenhouses** Arif, M.; P. Pauls (*University of Guelph*)

TOPIC 17: Mineral Nutrition (Posters P140-P142)

P140	**Towards low-input production of subirrigated chrysanthemums: Phosphorus acquisition and internal utilization efficiencies in two contrasting cultivars** Flaherty, E.; B. Shelp (*University of Guelph*)
P141	**A single amino-acid substitution in the Lsi1 aquaporin of tobacco confers elevated Si transport and plasma-membrane localization** Coskun, D.[1]; R. Deshmukh[1]; H. Sonah[1]; S. Matha[1]; R. Frenette-Cotton[1]; L. Tremblay[1]; P. Isenring[1]; R. Bélanger[2] ([1]*Laval University;* [2]*Université Laval*)
P142	**Towards low-input production of sub-irrigated chrysanthemums: optimizing calcium and magnesium usage** Duncan Stephens, S.[*1]; E. Flaherty[1]; W. Sutton[1]; W. MacDonald[2]; G. Bozzo[1]; B. Shelp[1] ([1]*University of Guelph;* [2]*Niagara College*)

TOPIC 18: Molecular Host-Pathogen Interactions (Posters P143-P154)

P143	**Creation of pokeweed mosaic virus infectious clone to study host-pathogen interactions** Klenov, A.*; K. Hudak (*York University*)
P144	**Monaghan Lab: Plant immunology and immune homeostasis** Monaghan, J. (Queen's University)
P145	**Variation between Ilyonectria mors-panacis and I. robusta isolates causing root rot in Panax quinquefolius** Behdarvandi, B*; M. Valliani; P. Goodwin (*University of Guelph*)
P146	**Para-aminobenzoic acid (PABA) reducing *Botrytis cinerea* disease in leaves of Nicotiana benthamiana plants** Costa, L.; A. Munawar; P. Goodwin (*University of Guelph*)
P147	**Development of a Grapevine rupestris stem pitting-associated virus strain Syrah clone and expression/VIGS vectors for *Vitis vinifera*** Roscow, O.; B. Meng (*University of Guelph*)
P148	**Molecular characterization of plasmodesmata-located protein Osmotin34 from Arabidopsis and its association with Turnip Mosaic Virus Infection** He, R.*[1]; M. Bernards[2]; A. Wang[3] ([1]*Western University;* [2]*The University of Western Ontario;* [3]*Agriculture and Agri-Food Canada; University of Western Ontario*)
P149	**Investigating the role of a family of receptor-like-cytoplasmic kinases in immune signaling** Gonzalez-Ferrer, C.*; K. Siegal; J. Monaghan (*Queen's University*)
P150	**Identification of determinants in the turnip mosaic virus coat protein that are critical for viral cell-to-cell movement and virion assembly** Dai, Z.*[1]; M. Bernards[2]; A. Wang[3] ([1]*Western University;* [2]*The University of Western Ontario;* [3]*Agriculture and Agri-Food Canada; University of Western Ontario*)
P151	**The Ve-resistance locus in tomato, a plant signalling intercept** Robb, E.[1]; R. Nazar[1]; C. Castroverde[1]; A. Kurosky[2]; H. Shittu[3]; X. Xu[1] ([1]*University of Guelph;* [2]*University of Texas Medical Branch;* [3]*University of Benin)*
P152	**Subcellular localization of prune dwarf virus coat and movement proteins** Simkovich, A.*[1]; S. Kohalmi[1]; A. Wang[2] ([1]*The University of Western Ontario;* [2]*Agriculture and Agri-Food Canada; University of Western Ontario*)
P153	**Control of Fusarium head blight using the Next-generation of fungicides** Djavaheri, M[1], T, Bender[1], H, Borhan[1], S, Clark[2], R, Kutcher[3], R, Subramaniam[1], S, Robinson[1] ([1]*Agriculture and Agri-Food Canada AAFC;* [2]*National Research Council Canada;* [3]*University of Saskatchewan)*
P154	**Comparative transcriptomics of root responses to pathogenic (*Fusarium oxysporum* f. sp. lini) and non-pathogenic (*Rhizoglomus irregulare*) fungi** I. Quintans; E. Packard; V. Kokkoris; E. Vukicevich; D. Adhikary; Deyholos, M *(University of British Columbia, Okanagan*)

TOPIC 19: Molecular Plant Improvement and Genome Editing (Posters P155-P158)

P155	**Characterization of *Arabidopsis thaliana* MYB transcription factor complexes and their roles in the regulation of suberin biosynthetic genes** Tapp, K.*; S. Khalil; O. Rowland (*Carleton University*)
P156	**Targeted mutagenesis in soybean using CRISPR-Cas9 system** Lu, M.; L. Tian (*Agriculture and Agri-Food Canada*)
P157	**Characterization of the EPF family of signalling peptides controlling stomatal development in Monocots** Jangra, R.*[1]; S. Brunetti[1]; N. Foroud[2]; P. Gulick[1]; J.S. Lee[1] ([1]*Concordia University;* [2]*Agriculture and Agri-Food Canada*)
P158	**The Global Industry Coalition (GIC) contributions to the work of Implementing the Cartagena Protocol on Biosafety** Luque, L. (CropLife Canada)

TOPIC 20: Mycology (Posters P159-P161)

P159	**Genetic diversity of *Fusarium poae* field populations affecting small grain cereals in western Canada.** M. Tabassum[1]; A. Oghenekaro[1]; D. Fernando[1]; R. Kutcher[2]; D. Overy[3]; J. Tucker[1]; K. Turkington[4]; L. Harris[3]; W. Xu[5]; Wang, X.[5] ([1]*University of Manitoba;* [2]*University of Saskatchewan;* [3]*Ottawa Research and Development Centre;* [4]*AAFC;* [5]*Morden Research and Development Centre)*
P160	**Over-expression of a constitutively active MAP kinase kinase, MKK2, in *Fusarium graminearum* reduces its vegetative growth and disease progression in wheat** Gonzalez-Peña Fundora, D.*[1]; A. Eranthodi[1]; C. Rampitsch[2]; R. Subramaniam; N. Thakor[1]; N. Foroud ([1]*University of Lethbridge;* [2]*Agriculture and Agri-food Canada*)
P161	**The Canadian Collection of Fungal Cultures: What we have for you and what you have for us.** Robleh Djama, Z.; C. Robidas; B. Goulet; T. Rintoul (*Agriculture and Agri-Food Canada*)

TOPIC 21: Pathology, Epidemiology and Disease Management (Posters P162-P196)

P162	**Buckwheat rhizosphere as a host for unique bacterial species** Fofana, B.[1]; A. Alkhnajari[1]; K. Ghose[2]; A. Somalraju[1] ([1]*Charlottetown research and development centre;* [3]*Texas Tech University*)
P163	**A mycovirus cause hypovirulence in rice pathogen *Microdochium albescens*** Murcia, J.*[1]; R. Cascardo[2]; F. Souza[2]; M. Souza[2]; C. Farias[1]; D. Barros[1]; P. Alfenas[2] ([1]*Universidade Federal de Pelotas;* [2]*Universidade Federal de Viçosa*)
P164	**Development of a novel, eco-friendly plant defense activator against Botrytis blight** Seifi, S.; A. Zarei; T. Hsiang; B. Shelp (*University of Guelph*)

P165	**A potential QTL on Chromosome 3BS with major effect on adult plant resistance to stripe rust in a Canadian winter wheat diversity panel** Serajazari, M.[1]; H. Sidhu[1]; J. Follings[2]; N. Wilker[1]; P. Pauls[1]; A. Navabi[1] ([1]*University of Guelph;* [2]*Ontario Ministry of Agriculture, Food and Rural Affairs*)
P166	**Several grass crops reduce resting spores of *Plasmodiophora brassicae* in soil** Sedaghatkish, A.[*1]; B. Gossen[2,]; M.R. McDonald[1] ([1]*University of Guelph;* [2]*Agriculture and Agri-Food Canada*)
P167	**Development of an Immuno-PCR for the detection of pea root rot causal agent, Aphanomyces euteiches** Kaphle, S.[*1]; C. Sheedy[2]; S. Chatterton[2] ([1]*University of Lethbridge;* [2]*Agriculture and Agri-Food Canada)*
P168	**Fusarium head blight of wheat in Alberta: species complex and related trichothecene genotypes.** M. Hafiz; N. Schatz; M. Telfer; R. Gourlie; K. Turkington; Aboukhaddour, R. (*AAFC*)
P169	**A Brevibacillus fortis isolate produces extracellular antibiotics that inhibit the growth of the onion pathogen Fusarium oxysporum f. sp. cepae and other Fusarium species** Johnson, E.; M. Bowma; C. Dunlap (*USDA ARS*)
P170	**Post-harvest root decay of American ginseng (*Panax quinquefolious*) and the relationship with ginseng replant disease** Samur, I.[*]; P. Goodwin (*University of Guelph*)
P171	**Validation of antagonistic activity against fungal pathogens and the presence of antifungal genes in Pseudomonas chlororaphis strain S1Bt23** Xu, R.; J. Tambong; V. Plante (*Agriculture and Agri-Food Canada*)
P172	**Growth inhibition of the plant pathogen, Streptomyces scabies, using plant tinctures** Bakke, A.[*]; M. Vatta; R. Merrill (*University of Guelph*)
P173	**Reactions of Eastern Canada oat genotypes to crown rust** Xue, A.[1]; J. Menzies[2]; Y. Chen[2]; W. Yan[1]; B. Ma[2]; W. Guo[3]; F. Gao[2]; J. Liu[4]; C. Ren[5] ([1]*AAFC;* [2]*Agriculture and Agri-Food Canada;* [3]*Heilongjiang Bayi Agricultural University;* [4]*Inner Mongolia Agricultural University;* [5]*Baicheng Academy of Agricultural Sciences*)
P174	**Diversity in virulence frequencies and race structure of extensively and intensively sampled populations of *Puccinia coronata* Corda var avenae f.sp. avenae.** Menzies, J.[1]; J. Zhao[2]; S. Deceuninck[2]; H. Derksen[2]; Z. Popovic[2] ([1]*Agriculture and Agri-Food Canada;* [2]*Morden Research and Development Centre*)
P175	**Effect of host type on the virulence of Pyrenophora tritici-repentis (Ptr) in Canada** Wei, B.[*1]; S. Strelkov[1]; R. Aboukhaddour[2]; T. Despins[3]; M. Fernandez[4] ([1]*University of Alberta;* [2]*AAFC;* [3]*Agriculture and Agri-Food Canada, Lethbridge Research and Development Center;* [4]*Agriculture and Agri-Food Canada, Swift Current Research and Development Centre*)
P176	**Emerging diseases of new hazelnut varieties grown in the Fraser Valley, British Columbia.** Sabaratnam, S.; B. Drugmand; V. Vasile (*Ministry of Agriculture*)
P177	**In the footsteps of Dr. Margaret Newton: women plant pathologists leading the Canadian Phytopathological Society** Kora, C.[1]; D. Gaudet[2] ([1]*Pest Management Centre;* [2]*Retired*)
P178	**Integrated management of Cucumber Downey Mildew: a strategic approach** Kora, C.[1]; C. Gagnon[1]; C. Trueman[2]; G. Marchand[3]; A. Munawar[4] ([1]*Pest Management Centre;* [2]*University of Guelph, Ridgetown Campus;* [3]*Agriculture and Agri-Food Canada;* [4]*University of Guelph*)
P179	**Effect of Miravis Neo on Gibberella ear rot and related mycotoxins in corn grain** Eli, K.[*1]; D. Hooker[1]; V. Limay-Rios[1]; A. Schaafsma[2] [1]*University of Guelph;* [2]*University of Guelph - Ridgetown Campus*

P180	**A rapid molecular assay to identify *Plasmodiophora brassicae* pathotypes from plant, soil and water samples** Tso, H.[*1]; L. Galindo-González[1]; H. Askarian[1]; M. Holtz[2]; S. Strelkov[1] ([1]*University of Alberta;* [2]*Alberta Agriculture and Forestry*)
P181	**Potential use of *Acer saccharum* leaf extract for the control of lettuce bacterial leaf spot and varnish spot** Delisle-Houde, M.[*]; R. Tweddell (*Université Laval*)
P182	**Genetic mapping of adult plant leaf rust resistance in spring wheat line BW278** Lewarne, M.[*1]; B. McCallum[2]; C. Hiebert[2]; C. McCartney[3] ([1]*University of Manitoba;* [2]*Agriculture and Agri-Food Canada;* [3]*Morden Research and Development Centre*)
P183	**Resting spores of *Plasmodiophora brassicae* continue to develop after death of their host.** F. Al-Daoud[1]; Gossen, B.[2]; M.R. McDonald[1] ([1]*University of Guelph;* [2]*Agriculture and Agri-Food Canada*)
P184	**Identifying clubroot resistance in canola and Brassica vegetable cultivars for Ontario, 2018** Drury, S.[*1]; B. Gossen[2]; M.R. McDonald[1] ([1]*University of Guelph;* [2]*Agriculture and Agri-Food Canada*)
P185	**Chitosan inhibits growth and development of *Phytophthora nicotianae* and induces tomato resistance against this pathogen** A. Falcón-Rodríguez[1]; D. Csotales Menéndez[1]; Gonzalez-Peña Fundora, D.[*2]; D. Vaillant Flores[3]; M. Ochoa-Villarreal[4]; M. Martínez-Téllez[4] ([1]*National Institute of Agricultural Sciences (INCA);* [2]*University of Lethbridge;* [3]*Instituto de Investigaciones de Sanidad Vegetal;* [4]*Centro de Investigación en Alimentación y Desarrollo (CIAD)*)
P186	**Rotation with Aphanomyces-resistant pulse crops or intercropping with Brassicas to reduce impact of Aphanomyces root rot on field pea** Chatterton, S.[1]; S. Banniza[2]; R. Bowness[3]; M. Harding[4]; M. Hubbard[5]; L. Shaw[6]; S. Shirtliffe[2] ([1]*Agriculture and Agri-Food Canada;* [2]*University of Saskatchewan;* [3]*Alberta Agriculture and Forestry;* [4]*Agriculture and Forestry;* [5]*Swift Current Research and Development Centre;*[6]*South East Research Farm*)
P187	**Enniatin production does not influence *Fusarium avenaceum* pathogenicity on durum wheat or peas** Foroud, N.[1]; A. Eranthodi[2]; D. Overy[3]; D. Schneiderman[1]; L. Harris[3]; S. Chatterton[1]; D. Gonzalez-Peña Fundora[2]; W. Zhao[4] ([1]*Agriculture and Agri-Food Canada;* [2]*University of Lethbridge;* [3]*Ottawa Research and Development Centre;* [4]*Agricultural University of Hebei*)
P188	**SaltroTM: a SDHI seed applied fungicide for early control of blackleg in canola** Padmathilake, R.[*]; P. Parks; J. Rosset; R. Gulden; D. Fernando (*University of Manitoba*)
P189	**A novel approach to blackleg management in canola: Combining a new fungicide seed treatment with improved flea beetle control** Huang, S.[1]; D. Fernando[1]; D. McLaren[2]; G. Peng[2] ([1]*University of Manitoba;* [2]*Agriculture and Agri-Food Canada (AAFC)*)
P190	**Sensitivity of *Pseudoperonospora humuli* to the systemic fungicides, metalaxyl and fosetyl-Al.** Munawar, A.[1]; M. Filatos[2]; C. Bakker[1]; M. McDonald[1]; K. Jordan[1] ([1]*University of Guelph;* [2]*Ontario Ministry of Agriculture, Food and Rural Affair*)
P191	**Effect of biochar, vermicompost, micronutrient, and biofungicides for suppression of Sclerotinia rot of cabbage** Burlakoti, R.; S. Warhaft; C. Koch (*Agriculture and Agri-food Canada*)

P192	**Effects of temperature, light quality and nutrients on spore germination and growth rate of *Colletotrichum acutatum*** Charkhzarrin, Z.*; V. Gravel (*McGill University*)
P193	**Screening disinfectants for those effective against *Plasmodiophora brassicae* resting spores** M. Harding[1]; B. Hill[2]; G. Daniels[2]; D. Burke[2]; R. Howard[3]; Chatterton, S.[4] ([1]*Agriculture and Forestry;* [2]*Alberta Agriculture and Forestry;* [3]*RJH Ag Research Solutions Ltd.;* [4]*Agriculture and Agri-Food Canada*)
P194	**Apple and apricot decline in Ontario** Griffiths, J.[1]; A. Lofano[1]; O. Ellouz[1]; A. Wang[2] ([1]*Agriculture and Agri-food Canada;* [2]*Agriculture and Agri-Food Canada; University of Western Ontario*)
P195	**Exobasidium diseases of *Vaccinium* spp. in Newfoundland** Jewell, L.; K. Compton; D. Wiseman (*AAFC*)
P196	**Revysol ® a new fungicide for horticulture crops and turf** Martens, G.; S. MacDonald; K. Dufton (*BASF Canada*)
P197	**Efficacy of registered fungicides to control cucurbit downy mildew isolates collected in 2017 and 2018 from Québec and Ontario** Marchand, G.[1]; C. Trueman[2]; O. Carisse[1] ([1]*Agriculture and Agri-Food Canada;* [2]*University of Guelph, Ridgetown Campus*)

TOPIC 22: Plant Physiology (Posters P198-P204)

P198	**Characterization of a novel Arabidopsis protein kinase involved in flowering** Wang, L.*; R.G. Uhrig (*University of Alberta*)
P199	**Pathogens and molds affecting quality of medical cannabis (*Cannabis sativa* L.) inflorescences.** Z. Punja; D. Sutton; Scott, C (*Simon Fraser University*)
P200	**Role of aquaporins in root water transport of canola (*Brassica napus*) plants following waterlogging** Liu, M.*; J. Zwiazek (*University of Alberta*)
P201	**Identification and characterization of a photosynthesis-related phosphatidylinositide transfer protein in Arabidopsis** Kim, E.[1]; H. Yu[1]; Y. Lee[2]; H. Kim[3]; K. Lee[1] ([1]*National Institute of Agricultural Sciences;* [2]*Pohang University of Science and Technology;* [3]*Sejong University*)
P202	**What would you do if you had more days before shedding your leaves? Not much, said the sink-limited plant *E. americanum*** Bertrand, H.*; L. Lapointe (*Université Laval*)
P203	**Nitrogen isotope composition and content varied along xylem transport pathway of black cottonwood (Populus trichocarpa) under near steady-state hydroponics** Hu, Y.* (*University of British Columbia*)
P204	**Development of an efficient temporary immersion system for the micropropagation of American chestnut (*Castanea dentata* (Marsh.) Borkh.)** Liu, Z.*; M. Shukla; P. Saxena (*University of Guelph*)

TOPIC 23: Plant-Biotic Interactions (Posters P205-P211)

P205	**Foliar selenium application for controlling fungal diseases in greenhouse** Fofana, B.; A. Somalraju; J. McCallum; R. Peters; D. Main *(Charlottetown research and development centre)*
P206	**Diversity of rhizosphere microbiomes in pea plant with and without root rot** Z. Hossain[1]; M. Hubbard[1]; L. Bainard[1]; Gan, Y.[2] ([1]*Swift Current Research and Development Centre;* [2]*Agriculture and Agri-Food Canada*)
P207	**Cucurbit seed biogels antagonize major plant pathogens** Khalaf, E.; M. Raizada (*University of Guelph*)
P208	**Evaluating the ability of endophytic bacteria to support boreal forest tree growth** Puri, A.[*]; K. Padda; C. Chanway (*University of British Columbia*)
P209	**Investigating the Role of *Brachypodium distachyon* Cellulose Synthase 8 in *Gluconacetobacter diazotrophicus* Colonization** Yang, X.[*1]; K. Hill[1]; R. Austin[2]; K. Vessey[3]; L. Tian[2] ([1]*The University of Western Ontario;* [2]*Agriculture and Agri-Food Canada;* [3]*Saint Mary's University*)
P210	**Interaction of Arabidopsis calmodulin-like proteins with the protein 2b, an RNA silencing suppressor of cucumber mosaic virus** Nakahara, K.[1]; H. Teresinski[2]; M. Suto[1]; S. Jin[1]; W. Snedden[2] ([1]*Hokkaido University;* [2]*Queen's University*)
P211	**Context is everything: benefits of carbonatite rock fertilizers depend strongly on growing conditions and plant type** Jones, J.[1]; P. Antunes[2]; F. Guinel[1] ([1]*Wilfrid Laurier University;* [2]*Algoma University*)

TOPIC 24: Post-Harvest Physiology and Management (Posters P212-213)

P212	**Effect of pre-harvest hexanal spray on the quality of 'Honeycrisp' apples during post-harvest storage** Sriskantharajah, K.[*]; A. Sullivan; G. Paliyath; J. Subramanian (*University of Guelph*)
P213	**Smart delivery of hexanal from nanomatrix for extending the shelf life of fruits** Ranjan, S.[*]; L. Lim; A. Sullivan; G. Paliyath; J. Subramanian (*University of Guelph*)

TOPIC 25: Teaching in the Plant Sciences (Posters P214-215)

P214	**Environmental issues, concerns and education in rural districts** Elawana Mudiyanselage, N. (*Central Environmental Authority in Sri Lanka*)
P215	**The power of pi: using raspberry pis to photograph actively growing plants** Meyer, C.; K. Raymond (*University of Guelph*)

WORKSHOPS IN PLANT CANADA 2019

Plant Canada 2019 brings an exciting program of workshops for your benefit that are led by both professional and academic scientists.

WORKSHOPS

Workshops are open to all registered attendees of Plant Canada 2019.
Workshops are **free** with **no reservations** required.

The times and locations for each Workshop are provided in the table below.

#	Date	Times	Location	Title
W1	Sunday July 7th	4:15 – 5:15 pm	ROZ 104	**Sponsor Introductions (Lightning Round)**
W2	Monday July 8th	11:15 – 11:50 am	ROZ 101	**Careers Outside of Academia**
W3	Monday July 8th	11:15 – 12:15 pm	ROZ 103	**Towards Developing a Plant Health Science Vision for Canada**
W4	Monday July 8th	12:00 – 12:50 pm	ROZ 101	**NSERC Information Session**
W5	Tuesday July 9th	11:15 – 12:15 pm	ROZ 101	**Beyond Grad School: A Guide for PDF and PI Positions**
W6	Tuesday July 9th	12:15 – 1:00 pm	ROZ 102	**CAPB-Sponsored Genome Editing**
W7	Monday July 8th	7:00 – 8:30 pm	ROZ 105	**CBA Workshop: Gender in Ecology**

WORKSHOP #1- SPONSOR INTRODUCTIONS

Sunday July 7th - **4:15 - 5:15 pm ROZ r.104**

Sponsor Introductions

The purpose of this workshop is to focus your attention on our Silver and Gold sponsors that have exhibits in Peter Clark Hall (Poster area). This opportunity will be presented in a lightning round format to give you a chance to listen to details on their company and products for 3-4 minutes and 1-2 minutes for questions. The companies in this workshop include our Gold Sponsor Innotech Alberta, and our Silver Sponsors BASF, Biochambers Inc., Canada Science Publishing, Conviron, Hoskin Scientific, LI-COR Biosciences Inc., and Western Grains Research Foundation.

WORKSHOP #2 -CAREERS OUTSIDE OF ACADEMIA

Monday July 8th - **11:15 - 11:50 am ROZ r.101**

Careers outside of Academia

Goal: The goal of this workshop is to show career paths outside of academic research. The workshop will examine the differences between industry, government, and academia and any benefits, experiences, or drawbacks faced in a non-academic research setting. The workshop will be led by Dr. Teagen Quilichini who has valuable experience in academic (as a PhD/post-doc at UBC), industry (as a post-doc with Annandia Labs), and government (as a research associate with the NRC) research settings.

Speaker:

Dr. Teagen Quilichini (NRC Saskatoon) – Research Associate

WORKSHOP #3 -TOWARDS DEVELOPING A PLANT HEALTH SCIENCE VISION FOR CANADA

Monday July 8th - **11:15 - 12:15 pm ROZ r.103**

Towards developing a plant health science vision for Canada

The intent of this workshop is to foster discussion within the plant health community and act as a catalyst for imagining a common vision for plant health science that is unifying, relevant and aspirational. With increasing trade, the changing climate, the evolving policy/program landscape, and advancing science & technology capabilities, Canada is at a critical juncture. Due to these drivers, plant health threats will continue to intensify in number, range, and diversity posing potentially catastrophic consequences to Canada`s economic, environmental and sustainable development. Endorsed in 2017, the Plant and Animal Health Strategy directed that our current situation demands effective and urgent proactive collaborative action to ensure Canada's bio-economy sector, including agriculture and forestry, climbs to the cutting-edge; capitalizing on novel and disruptive discoveries and having the instruments (e.g. legislation, policy, surveillance, programs, research funds, etc.) in the most effective and efficient manner to maintain a clean environment and a strong economy. Plant health science will be a key component in implementing the Strategy, and there is a need to galvanize research scientists and organizations to unite their efforts under a common vision.

Agenda

Time	Presentations
11h15-11h20	**Introduction** Dr. Rene Van Acker, Dean, Ontario Agricultural College, University of Guelph
11h20-11h30	**Implementing the Plant piece of the Plant and Animal Health Strategy; progress to today** Deborah Lorenzin, Secretariat Canadian Plant Health Council
11h30-11h40	**Plant Canada : Recent efforts/successes in advocating for plant science in Canada** Dr. Deena Errampalli, President, Plant Canada
11h40-11h50	**Why is a plant health science vision needed?** Dr. Michele Marcotte, Director Ottawa Research & Development Centre, AAFC
11h50-12h00	**Establishing a Plant Health Vision for Canada** Dr. Pierre Bilodeau, Executive Director, Plant Health Science, CFIA
12h00-12h15	**Discussion/Conclusion**

WORKSHOP #4 -NSERC INFORMATION SESSION
Monday July 8th - 12:00 - 12:50 pm ROZ r.101

NSERC Information Session

The NSERC presentation will be delivered by Stéphanie Lanoix, Program Officer, Research Grants and Scholarships, NSERC, and it will focus on the recent results of the Discovery Grants competition with an emphasis on those from the Biological Systems and Functions Evaluation group. Success rates of plant sciences within the discovery and RTI programs, and the distribution of the 2018 federal investment for fundamental research, will be addressed. NSERC news and updates will also be presented. Relevant data will be provided in more detail than is provided by NSERC on their relevant websites.

WORKSHOP #5 -BEYOND GRAD SCHOOL: A GUIDE FOR PDF AND PI POSITIONS
Tuesday July 9th - 11:15 - 12:15 pm ROZ r.101

Beyond grad school: A guide for PDF and PI positions

The goal of the workshop is to help junior scientists apply for careers following graduate school. The workshop will address what qualities in an application (CV, cover letter) that potential employers are looking for. The speakers will also share tips and experiences that they have gained during their time as a PDF and Junior PI. The workshop will be led by Dr. Jacqueline Monaghan and Dr. Heather McFarlane. Both are junior PIs and have done their PhDs in Canada and post-doctoral work abroad.

Speakers:

Dr. Jacqueline Monaghan (Queen's U) – Asst. Professor

Dr. Heather McFarlane (U of Toronto) – Asst. Professor

WORKSHOP #6 -CAPB-SPONSORED GENOME EDITING

Tuesday July 9th - 12:15 - 1:00 pm ROZ r.102

CAPB-Sponsored Genome Editing Workshop

Genome editing tools have greatly accelerated the creation of new plant varieties. The implications with regards to economic profitability, governmental regulations and public acceptance of these technologies in Canada and in other countries will be discussed in this workshop. We have invited four panelists from government, academia and industry to describe the current status of this technology in Canada and in the rest of the world.

Agenda:

12:00 **Introduction**. Dr. Rima Menassa, President, Canadian Association for Plant Biotechnology – Research Scientist, Agriculture and Agri-Food Canada

12:05 **Genome editing: getting acquainted with the technology**. Dr. Bourlaye Fofana, Research Scientist, Agriculture and Agri-Food Canada

12:15 **Industry's perspective on genome editing**. Luis Luque, Science and Regulatory Affairs Officer, Crop Life Canada

12:25 **Clarifying Canada's Regulatory System: A focus on gene editing**. Amanda DeBruyn, Plant Biosafety Policy Analyst, Canadian Food Inspection Agency

12:35 **Canada's Position in the Global Regulation of Genome Editing**. Stuart Smyth, Assistant Professor, University of Saskatchewan

12:45 **Discussion**

WORKSHOP #7 -CBA WORKSHOP: GENDER IN ECOLOGY

Monday July 8th - 7:00 - 8:30 pm ROZ r.105

CBA Workshop: Gender in Ecology

Nicole Fenton (CBA President Elect) will host a CBA workshop to examine the influence of gender on ecological research.

Alphabetical Index of Registrants, Affiliation and e-mail Contacts

As of June 21, 2019

Name	Company/Org	Email
Abaya, Abdurraouf	University of Guelph	abayaa@uoguelph.ca
Abeysingha, Dhanuja	University of Alberta	abeysing@ualberta.ca
Aboukhaddour, Reem	Agriculture and Agri-Food Canada	reem.aboukhaddour@canada.ca
Adal, Ayelign	University of British Columbia	ayelign@gmail.com
Adams, Keith	University of British Columbia	keitha@mail.ubc.ca
Adityani, Claresta	University of Toronto	claresta.adityani@mail.utoronto.ca
Alzaben, Heba	University of Waterloo	halzaben@uwaterloo.ca
Amirsadeghi, Sasan	University of Guelph	samirsad@uoguelph.ca
Amyot, Lisa	Agriculture and Agri-Food Canada	lisa.amyot@canada.ca
Anderson, Brock	University of Guelph	bander03@uoguelph.ca
Anderson, Krista	Bayer CropScience	krista.anderson@bayer.com
Anderson, Paige	University of Manitoba	anders75@myumanitoba.ca
Anku, Kenneth	Dalhousie University	kenneth.anku@dal.ca
Arif, Muhammad	University of Guelph	marif@uoguelph.ca
Asif, Mahnoor	University of Alberta	masif@ualberta.ca
Ayari, Mohamed	Université Laval	mohamed-amine.ayari.2@ulaval.ca
Bailey , Allison	University of Guelph	abaile08@uoguelph.ca
Bakke, Amanda	University of Guelph	abakke@uoguelph.ca
Barabé, Denis	Université de Montréal	barabedenis1@gmail.com
Basra, Amarjit	OCP North America	a.basra@ocpna.com
Bayley, Daniel	University of Guelph	dbayley@alumni.uoguelph.ca
Beaudoin, Nathalie	University of Sherbrooke	nathalie.beaudoin@usherbrooke.ca
Behdarvandi, Behrang	University of Guelph	bbehdarv@uoguelph.ca
Belanger, Jerome	McGill University	jerome.gelinasbelanger@mail.mcgill.ca
Belanger, Richard	University Laval	richard.belanger@fsaa.ulaval.ca
Belmonte, Mark	University of Manitoba	mark.belmonte@umanitoba.ca
Bender, Kyle	University of Zurich	kyle.bender@botinst.uzh.ch
Bennett, Lauren	University of Guelph	lbenne08@uoguelph.ca
Berardi, Nicole	University of Guelph	nberardi@uoguelph.ca
Beres, Brian	Agriculture and Agri-Food Canada	brian.beres@canada.ca
Bergman, Matthew	University of Toronto	matthew.bergman@mail.utoronto.ca
Bernards, Mark	University of Western Ontario	bernards@uwo.ca
Beronilla, Paula	University of Toronto	paula.beronilla@mail.utoronto.ca
Bertrand, Hugo	Université Laval	hugo.bertrand.4@ulaval.ca
Bhattarai, Surendra	University of Saskatchewan	surendra.bhattarai@usask.ca
Bi, Wenlu	University of Guelph	wenlubi@uoguelph.ca
Bignell, Dawn	Memorial University of Newfoundland	dbignell@mun.ca
Bilodeau, Guillaume	Canadian Food Inspection Agency	guillaume.bilodeau@canada.ca

Bird, David	Mount Royal University	dbird@mtroyal.ca
Bisht, Vikram	Manitoba Agriculture	vikram.bisht@gov.mb.ca
Blauel, Tyler	University of Guelph	tblauel@uoguelph.ca
Boateng, Kennedy	University of Victoria	boatengk@uvic.ca
Boddington, Kelly	University of Guelph	kbodding@uoguelph.ca
Booker, Helen	University of Saskatchewan	helen.booker@usask.ca
Boroke, Firdissa	Agriculture and Agri-Food Canada	firdissa.boroke@canada.ca
Bouchard, Andreanne	University of Ottawa	abouc103@uottawa.ca
Bozzo, Gale	University of Guelph	gbozzo@uoguelph.ca
Bradley, Rebecca	University of Guelph	rbradl04@uoguelph.ca
Brady, Siobhan	University of California	sbrady@ucdavis.edu
Braun, Kelton	University of Saskatchewan	kelton.braun@usask.ca
Bredow, Melissa	Queen's University	11mb95@queensu.ca
Brown, Adam	University of Guelph	abrown44@uoguelph.ca
Bruce, Robert	University of Guelph	rbruce@uoguelph.ca
Bruch, Austin	University of Guelph	brucha@uoguelph.ca
Bruneau, Anne	Université de Montréal	anne.bruneau@umontreal.ca
Bruulsema, Tom	IPNI Canada	tom.bruulsema@ipni.net
Buchwaldt, Lone	Agriculture and Agri-Food Canada	lone.buchwaldt@canada.ca
Bunsick, Michael	University of Toronto	michael.bunsick@mail.utoronto.ca
Burlakoti, Rishi	Agriculture and Agri-Food Canada	rishi.burlakoti@canada.ca
Burnside, Mariel	University of Guelph	mburnsid@uoguelph.ca
Burt, Andrew	Agriculture and Agri-Food Canada	andrew.burt@canada.ca
Butler, Victoria	University of Guelph	vbutler@uoguelph.ca
Callaghan, Josh	University of Guelph	callaghj@uoguelph.ca
Cameron, Robin	McMaster University	rcamero@mcmaster.ca
Carianopol, Carina	University of Toronto	carina.carianopol@utoronto.ca
Carolina Rodríguez, Juanita	Université du Québec en Abitibi-Témiscamingue	rodj06@uqat.ca
Carr, Matt	University of Saskatchewan	mac211@mail.usask.ca
Carswell, Matthew	University of Guelph	mcarswel@uoguelph.ca
Cattani, Douglas	University of Manitoba	Doug.Cattani@umanitoba.ca
Cavallin, Nadia	Royal Botanical Gardens	ncavallin@rbg.ca
Cayouette, Jacques	Agriculture and Agri-Food Canada	jacques.cayouette@canada.ca
Chan, Norris	University of Guelph	nchan03@uoguelph.ca
Chang, Kan-Fa	University of Alberta	kan.fa.chang@gov.ab.ca
Chapagain, Tejendra	University of Guelph	tejendra@uoguelph.ca
Charkhzarrin, Zahra	McGill University	zahra.charkhzarrin@mail.mcgill.ca
Charles, Trevor	University of Waterloo	tcharles@uwaterloo.ca
Charron, Jean-Benoit	McGill University	jean-benoit.charron@mcgill.ca
Chatterton, Syama	Agriculture and Agri-food Canada	syama.chatterton@canada.ca
Chaudhary, Raju	University of Saskatchewan	raju.chaudhary@usask.ca
Cheema, Mumtaz	Grenfell Campus Memorial University	mcheema@grenfell.mun.ca
Chen, Guanqun	University of Alberta	gc24@ualberta.ca

Chen, Haoran	University of Manitoba	Chenh318@myumanitoba.ca
Chen, Ruite	McGill University	ruite.chen@mail.mcgill.ca
Chen, Shiyong	Southwest Minzu University	chengshi8827@163.com
Chen, Wei-Yuan	McGill University	weiyuanchen2015@gmail.com
Chen, Wen	Agriculture and Agri-Food Canada	wen.chen@canada.ca
Cheung, Wing-Fai	PlantForm Corp.	wfcheung@uoguelph.ca
Chiasson, David	Saint Mary's University	chiassond@gmail.com
Chin-Fatt, Adam	Western University	achinfat@uwo.ca
Chivers, Jennifer	York University	jchivers@yorku.ca
Chuong, Simon	University of Waterloo	schuong@uwaterloo.ca
Clark, Shawn	National Research Council Canada	Shawn.Clark@nrc.ca
Clayton, Emily	University of Western Ontario	eclayto3@uwo.ca
Colasanti, Joseph	University of Guelph	jcolasan@uoguelph.ca
Congreves, Kate	University of Saskatchewan	kate.congreves@usask.ca
Conn, Kenneth	Canadian Phyto Pathological Society	kennethconncps@gmail.com
Constabel, C. Peter	University of Victoria	cpc@uvic.ca
Coskun, Devrim	Laval University	devrim.coskun.1@ulaval.ca
Cossus, Louis	Laval University	louis.cossus@gmail.com
Costa, Lucio	University of Guelph	lucio@uoguelph.ca
Costain, Cecily	University of Guelph	ccostain@uoguelph.ca
Costea, Mihai	Wilfrid Laurier University	mcostea@wlu.ca
Costello, Ryan	University of Guelph	rcostell@uoguelph.ca
Cowan, Josh	Grain Farmers of Ontario	joshcowan@gfo.ca
Cox, Laura	University of Guelph	lcox05@uoguelph.ca
Cvetkovska, Marina	University of Ottawa	mcvetkov@uottawa.ca
Czerwinski, Matthew	Grain Farmers Of Ontario	mczerwinski@gfo.ca
Dai, Zhaoji	Western University	zdai9@uwo.ca
Danve Castroverde, Christian	Michigan State University	castrov3@msu.edu
Dastmalchi, Mehran	Brock University	mehran.dastmalchi@gmail.com
Datir, Sagar	Queen's University	sd153@queensu.ca
Davis, Art	University of Saskatchewan	art.davis@usask.ca
Davis, Benjamin	University of Toronto	bd13md@brocku.ca
Dayanandan, Selvadurai	Concordia University	daya.dayanandan@concordia.ca
de Jong, Grant	University of British Columbia	dejong.grant@gmail.com
De La Selle, Fernand	York University	fdelasel@my.yorku.ca
DeBrouwer, Erika	University of Guelph	edebrouw@uoguelph.ca
Deen, Bill	University of Guelph	bdeen@uoguelph.ca
Delisle-Houde, Maxime	Université Laval	maxime.delisle-houde.1@ulaval.ca
Denbigh, Georgia	Dalhousie University	g.denbigh@dal.ca
Deyholos, Michael	University of British Columbia	michael.deyholos@ubc.ca
Dhaubhadel, Sangeeta	Agriculture and Agri-Food Canada	sangeeta.dhaubhadel@canada.ca
Dickinson, Tim	Royal Ontario Museum	tim.dickinson@utoronto.ca
Dickson, Ashley	Syngenta Canada Inc.	ashley.dickson@syngenta.com

Dion, Pierre-Paul	Université Laval	pierre-paul.dion.1@ulaval.ca
Djavaheri, Mohammad	Agriculture and Agri-Food Canada	mohammad.djavaheri@canada.ca
Doering, Matthew	University of Manitoba	umdoeri0@myumanitoba.ca
Dolan, Liam	University of Oxford	Liam.dolan@plants.ox.ac.uk
Doner, Nathan	University of Guelph	donern@uoguelph.ca
Donoso, Thomas	McGill University	thomas.donoso@mail.mcgill.ca
Drugmand, Ben	British Columbia Ministry of Agriculture	Ben.Drugmand@gov.bc.ca
Drury, Sarah	University of Guelph	drury@uoguelph.ca
Duncan Stephens, Skye	University of Guelph	sduncans@uoguelph.ca
Durnford, Dion	University of New Brunswick	durnford@unb.ca
Durrani, Palwasha	Mahidol University	palwashadurrani@hotmail.com
Earl, Hugh	University of Guelph	hjearl@uoguelph.ca
Echevin, Emilie	Université de Montréal	emilie.eglantine.echevin@umontreal.ca
Egan, Lucy	Lincoln University	lucy.egan@hotmail.co.nz
Eli, Katiani	University of Guelph	elik@uoguelph.ca
Elliott, Tammy	Université de Montréal	tammy.elliott@mail.mcgill.ca
El-Mezawy, Aliaa	InnoTech Alberta	aliaa.el-mezawy@innotechalberta.ca
Eng, Ryan	Max Planck Institute of Molecular Plant Physiology	eng@mpimp-golm.mpg.de
Erland, Lauren	University of British Columbia	erlandl@mail.ubc.ca
Errampalli, Deena	Plant Canada	deenaerrampalli@bell.net
Falak, Igor	Corteva Agriscience	igor.falak@corteva.com
Fang Shi, Amy	University of Guelph / Ontario Ginseng Growers Association	fshi@uoguelph.ca
Farrow, Scott	John Innes Centre	scott.farrow@jic.ac.uk
Fatmawati, Annis	McGill University	annis.fatmawati@mail.mcgill.ca
Fedosejevs, Eric	University of Missouri	fedosejevse@missouri.edu
Fenton, Nicole	Université du Québec en Abitibi-Témiscamingue	nicole.fenton@uqat.ca
Fernando, Dilantha	University of Manitoba	Dilantha.fernando@umanitoba.ca
Fernando, Dilukshi	University of Manitoba	dilukshi.fernando@umanitoba.ca
Fetch, Tom	Agriculture and Agri-Food Canada	tom.fetch@canada.ca
Feyissa, Biruk A	University of Western Ontario	Bfeyissa@uwo.ca
Fish, Michael	Wilfrid Laurier University	fish1960@mylaurier.ca
Flaherty, Edward	University of Guelph	eflahert@uoguelph.ca
Fofana, Bourlaye	Agriculture and Agri-Food Canada	bourlaye.fofana@canada.ca
Foroud, Nora	Agriculture and Agri-Food Canada	nora.foroud@canada.ca
Forsyth, Jillian	University of British Columbia	jill.forsyth@hotmail.com
Foster, Adam	Agriculture and Agri-Food Canada	adam.foster2@canada.ca
Fowler, David 'Brian'	University of Saskatchewan	Brian.Fowler@usask.ca
Francom, Therese	University of Waterloo	tm2francom@uwaterloo.ca
Frank, Joshua	Western University	jfrank22@uwo.ca
Franke, Coreen	Nutrien Ag Solutions	coreen.franke@nutrien.com

Fredeen, Art	University of Northern British Columbia	fredeena@unbc.ca
Fredua-Agyeman, Rudolph	University of Alberta	freduaag@ualberta.ca
Galway, Moira	St. Francis Xavier University	mgalway@stfx.ca
Gan, Yantai	Agriculture and Agri-Food Canada	yantai.gan@canada.ca
Garant, Timothy	Carleton University	timgarant@cmail.carleton.ca
Gaudet, Denis	CPS Board Member	denisandregaudet@gmail.com
Gebre, Michael	University of Guelph	mgebre@uoguelph.ca
Geldner, Niko	University of Lausanne	Niko.Geldner@unil.ch
Geng, Betty	University of Toronto	b.geng@mail.utoronto.ca
Ghahremani, Mina	Queen's University	m.ghahremani@queensu.ca
Gillard, Chris	University of Guelph	cgillard@uoguelph.ca
Gomes, Malaika	University of Toronto	malaika.gomes@mail.utoronto.ca
Gonçalves dos Santos, Karen Cristine	Université du Québec à Trois-Rivières	cris.kgs@gmail.com
Gonzales-Vigi, Eliana	University of Toronto	e.gonzalesvigil@utoronto.ca
Gonzalez-Ferrer, Carmen	Queen's University	18cgf@queensu.ca
Gonzalez-Pena Fundora, Dianevys	Agriculture and Agri-Food Canada	dianevys.gonzalezpen@uleth.ca
Goodwin, Paul	University of Guelph	pgoodwin@uoguelph.ca
Goring, Daphne	University of Toronto	d.goring@utoronto.ca
Gossen, Bruce	Agriculture and Agri-Food Canada	Bruce.Gossen@canada.ca
Goud, Ellie	Cornell University	emg244@cornell.edu
Gourlay, Gerry	University of Victoria	holmgera@uvic.ca
Gourlie, Ryan	Agriculture and Agri-food Canada	ryan.gourlie@canada.ca
Gravel, Valerie	McGill University	valerie.gravel@mcgill.ca
Griffiths, Jonathan	Agriculture and Agri-Food Canada	jonathan.griffiths@canada.ca
Gritsunov, Artyom	University of Toronto	artyom.gritsunov@mail.utoronto.ca
Guinel, Frederique	Wilfrid Laurier University	fguinel@wlu.ca
Gunawardana, Duleeka	Memorial University of Newfoundland	dgunawardana@mun.ca
Guo, Xiaowei	Manitoba Pest Surveillance Initiative	xwg@mbpestlab.ca
Halat, Laryssa	University of British Columbia	laryssahalat@gmail.com
Halim, Abdul	McMaster University	halima4@mcmaster.ca
Hanly, Alexandria	Western University	ahanly2@uwo.ca
Hannoufa, Abdelali	Agriculture and Agri-Food Canada	Abdelali.Hannoufa@canada.ca
Hanson, Maureen	Cornell University	mrh5@cornell.edu
Hanzra, Harpreet	University of Guelph	hhanzra@uoguelph.ca
Hargreaves, Max	University of Guelph	whargrea@uoguelph.ca
Hawkins, Barbara	University of Victoria	bhawkins@uvic.ca
Hayward, Allison	FMC	allison.hayward@fmc.com
He, Rongrong	Western University	rhe46@uwo.ca
Hegde, Niranjan	McGill University	niranjan.hegde@mail.mcgill.ca
Henriquez, Maria Antonia	Agriculture and Agri-Food Canada	mariaantonia.henriquez@canada.ca
Hepworth, Shelley	Carleton University	shelley.hepworth@carleton.ca

Hewedy, Omar	University of Guelph	ohewedy@uoguelph.ca
Hezema, Yasmine	University of Guelph	yhezema@uoguelph.ca
Hicks, Kelsey	University of Guelph	hicksk@uoguelph.ca
Hiiback, Katrina	University of Toronto	k.hiiback@mail.utoronto.ca
Hilker, Brett	University of Guelph	bhilker@uoguelph.ca
Hoegy, Zachary	Syngenta Canada Inc.	zachary.hoegy@syngenta.com
Holmes, Janesse	Simon Fraser University	janesseh@sfu.ca
Hou, Anfu	Agriculture and Agri-Food Canada	anfu.hou@canada.ca
Hoyos-Villegas, Valerio	McGill University	valerio.hoyos-villegas@mcgill.ca
Hsiang, Tom	University of Guelph	thsiang@uoguelph.ca
Hu, Yi	University of British Columbia	philiphuyi@hotmail.com
Huang, Shuanglong	University of Manitoba	Shuanglong.Huang@umanitoba.ca
Huang, Yafan	Performance Plants Inc.	huangy@performanceplants.com
Hudak, Katalin	York University	hudak@yorku.ca
Hudgins, Elizabeth	Kwantlen University	elizabeth@urbanbeatdanceco.com
Hughes, Margaret	Brock University	mh13ka@brocku.ca
Hussain, Saad	University of Toronto	saads.hussain@mail.utoronto.ca
Hwang, Sheau-Fang	University of Alberta	sheau.fang.hwang@ualberta.ca
Ilyas, Umbrin	University of Guelph	uilyas@uoguelph.ca
In Lee, Soo	National Institute of Agricultural Sciences	silee@korea.kr
Iqbal, Irfan	McGill University	irfan.iqbal@mail.mcgill.ca
Irani, Solmaz	McMaster University	iranis4@mcmaster.ca
Isayenka, Iauhenia	University of Sherbrooke	Iauhenia.Isayenka@USherbrooke.ca
Islam, Shahima	University of Texas at Austin	shahima@utexas.edu
Ivanov, Dimitre	University of Western Ontario	divanov2@uwo.ca
Jangra, Raman	Concordia University	ramanjangra08@gmail.com
Jayawardhane, Jayamini	Memorial University of Newfoundland	jjayawardhan@mun.ca
Jesionowska, Monika	University of Guelph	mjesiono@uoguelph.ca
Jewell, Linda	Agriculture and Agri-Food Canada	linda.jewell@canada.ca
Johnson, Eric	USDA ARS	eric.johnson2@ars.usda.gov
Joly, David	Université de Moncton	david.joly@umoncton.ca
Jones, James	Wilfrid Laurier University	jone3630@mylaurier.ca
Jones, Max	University of Guelph	amjones@uoguelph.ca
Joshi, Sripad	McGill University	sripad.joshi@mail.mcgill.ca
Kadoll, Sukhjiwan	McGill University	sukhjiwan.kadoll@mail.mcgill.ca
Kaldis, Angelo	Agriculture and Agri-Food Canada	Angelo.Kaldis@canada.ca
Kalinger, Rebecca	Carleton University	beckykalinger@cmail.carleton.ca
Kanaris, Michael	University of Toronto	michael.kanaris@mail.utoronto.ca
Kaphle, Salina	University of Lethbridge	salina.kaphle@uleth.ca
Kaplanoglu, Emine	Agriculture and Agri-Food Canada	emine.kaplanoglu@canada.ca
Kapoor, Karuna	McGill University	karuna.kapoor@mail.mcgill.ca
Karamanos, Rigas	Koch Fertilizer Canada, ULC	rigas.karamanos@kochind.com
Katsande, Trust	University of Guelph	tkatsand@uoguelph.ca

Kaur, Rajvinder	McGill University	jaswinder.singh@mcgill.ca
Kaviani, Mina	University of Guelph	minakavyani@gmail.com
Keary, Katherine	University of Guelph	kkeary@uoguelph.ca
Khadka, Kamal	University of Guelph	khadkak@uoguelph.ca
Khalaf, Eman	University of Guelph	ekhalaf@uoguelph.ca
Khan, Deirdre	University of Manitoba	deirdre.khan@umanitoba.ca
Khanal, Nityananda	Agriculture and Agri-Food Canada	nityananda.khanal@canada.ca
Khanna, Kanika	Guru Nanak Dev University	kanika.27590@gmail.com
Khurana, Manraj	Western University	mkhuran5@uwo.ca
Kilburn, Ryan	Queen's University	12rjk2@queensu.ca
Kim, Won-Sik	Norgen Biotek Corp.	wonsik.kim@norgenbiotek.com
Kiselchuk, Connor	University of Guelph	ckiselch@uoguelph.ca
Klenov, Alexander	York University	alexkle@yorku.ca
Kohalmi, Susanne	University of Western Ontario	skohalmi@uwo.ca
Kong, Yun	University of Guelph	ky0257@gmail.com
Kora, Cezarina	Agriculture and Agri-Food Canada	Cezarina.Kora@canada.ca
Kubota, Hiroshi	Agriculture and Agri-Food Canada	hiroshi.kubota@canada.ca
Kumari Elawana Mudiyanselage, Neranjala	Central Environmental Authority	agri.project@yahoo.com
Kushalappa, Kumuda	University of Guelph	kkusha@uoguelph.ca
Kyung Lee, Hyun	University of Toronto	hyunkyung.lee@mail.utoronto.ca
Lacroix, Christian	University of Prince Edward Island	lacroix@upei.ca
LaForest, Natalie	University of Saskatchewan	nbl664@mail.usask.ca
Lambert, Megan	Western University	mlambe9@uwo.ca
Lapointe, Line	Laval University	line.lapointe@bio.ulaval.ca
Lee, Christopher	University of New Brunswick	clee5@unb.ca
Lee, Jonathan	University of Toronto	jonathans.lee@mail.utoronto.ca
Lee, Kyeong-Ryeol	National Institute of Agricultural Sciences	realdanny@korea.kr
Lee, Young-Sang	Soonchunhyang University	mariolee@sch.ac.kr
Lesy, Victoria	University of Guelph	vlesy@uoguelph.ca
Levesque, Serge	University of Guelph	serge@uoguelph.ca
Lewarne, Mallorie	University of Manitoba	lewarnem@myumanitoba.ca
Li, Qiaomu	Dalhousie University	qm999255@dal.ca
Liu, Mengmeng	University of Alberta	mliu3@ualberta.ca
Liu, Zhuoya	University of Guelph	zhuoya@uoguelph.ca
Livingston, Pamela	Corteva Agrisciences	pam.j.livingston@corteva.com
Lo, Clive	The University of Hong Kong	clivelo@hku.hk
Lobbezoo, Mariann	University of Guelph	mlobbezo@uoguelph.ca
Longley, Ariana	University of Guelph	alongley@uoguelph.ca
Lu, Mimmie	Agriculture and Agri-Food Canada	Mimmie.lu@canada.ca
Luque, Luis	CropLife Canada	luquel@croplife.ca
Ma, Bao-Luo	Agriculture and Agri-Food Canada	baoluo.ma@canada.ca
Ma, Xingliang	Global Institute for Food Security	xingliang.ma@gifs.ca
MacColl, Kevin	University of Guelph	kmaccoll@uoguelph.ca

MacFarlane, Mitchell	University of Guelph Ridgetown	jmacfa04@uoguelph.ca
Macfie, Sheila	University of Western Ontario	smacfie@uwo.ca
Macgregor, Stuart	University of Toronto	s.macgregor@mail.utoronto.ca
MacNeill, Greg	University of Guelph	macneilg@uoguelph.ca
Maglione, Remi	Université du Québec à Montréal	remi.maglione@gmail.com
Mahmoud, Soheil	University of British Columbia	soheil.mahmoud@ubc.ca
Maleki, Kobra	University of Quebec in Abitibi-Temiscamingue	kobimmm1359@gmail.com
Marchand, Geneviève	Agriculture and Agri-Food Canada	genevieve.marchand2@canada.ca
Marie, Telesphore	University of Guelph	mariet@uoguelph.ca
Markham, John	University of Manitoba	john.markham@umanitoba.ca
Marsh, Andie	Fluence Bio Engineering	andie.marsh@fluencebioengineering.com
Martens, Gerald	BASF Canada	gerald.martens@basf.com
Martin, Ralph	University of Guelph	rcmartin@uoguelph.ca
Massicotte, Hugues	University of Northern British Columbia	hugues@unbc.ca
Mathur, Jaideep	University of Guelph	jmathur@uoguelph.ca
May, William	Agriculture and Agri-Food Canada	william.may@canada.ca
McCabe, James	University of Guelph	mccabej140@gmail.com
McCallum, Brent	Agriculture and Agri-Food Canada	brent.mccallum@canada.ca
McDonald, Kyle	University of Manitoba	mcdona45@myumanitoba.ca
McDonald, Mary Ruth	University of Guelph	mrmcdona@uoguelph.ca
McEwen, Jesse	University of Northern British Columbia	mcewen@unbc.ca
McFarlane, Heather	University of Toronto	h.mcfarlane@utoronto.ca
McGary, Laura	University of Guelph	lmcgary@uoguelph.ca
McGuire, Delina	University of Saskatchewan	dim731@mail.usask.ca
McKenzie-Gopsill, Andrew	Agriculture and Agri-Food Canada	Andrew.McKenzie-Gopsill@canada.ca
Mehta, Devang	University of Alberta	devangmehta@ualberta.ca
Menassa, Rima	Agriculture and Agri-Food Canada	rima.menassa@canada.ca
Menzies, Jim	Agriculture and Agri-Food Canada	jim.menzies@canada.ca
Metsger, Deborah	Royal Ontario Museum	debm@rom.on.ca
Meyer, Chris	University of Guelph	cmeyer02@uoguelph.ca
Micallef, Barry	University of Guelph	bmicalle@uoguelph.ca
Micallef, Malgre	University of Guelph	mmicalle@uoguelph.ca
Michaud, Dominique	Université Laval	dominique.michaud@fsaa.ulaval.ca
Minow, Mark	University of Guelph	mminow@uoguelph.ca
Miraples, Angelica	University of Toronto	angelica.miraples@mail.utoronto.ca
Mitchell Fetch, Jennifer	Agriculture and Agri-Food Canada	jennifer.mitchellfetch@canada.ca
Mo, Clement	University of Guelph	moc@uoguelph.ca
Moeller, Emily	University of Guelph	moellere@uoguelph.ca
Mohamed, Deka	University of Toronto	deka.mohamed@mail.utoronto.ca
Molina, Isabel	Algoma University	isabel.molina@algomau.ca
Molina, Oscar	Agriculture and Agri-Food Canada	oscar.molina@canada.ca
Monaghan, Jacqueline	Queen's University	jm355@queensu.ca

Monthony, Adrian	University of Guelph	monthona@uoguelph.ca
Mott, Adam	University of Toronto	adam.mott@utoronto.ca
Mudiyansela, Champa	Agriculture and Agri-Food Canada	cwijekoo@gmail.com
Muileboom, Jade	University of Guelph	jmuilebo@uoguelph.ca
Mulholland, Samantha	Wilfrid Laurier University	mulh2400@mylaurier.ca
Munawar, Asifa	University of Guelph	munawara@uoguelph.ca
Murcia, Johan	Universida de Federal de Pelotas	jmmurciab@unal.edu.co
Murphy, Bridget	University of Western Ontario	bmurph26@uwo.ca
Naik, Sachin	Concordia University	me.sach71@gmail.com
Nakahara, Kenji	Hokkaido University	knakahar@res.agr.hokudai.ac.jp
Nakhforoosh, Alireza	Agriculture and Agri-Food Canada	alireza.nakhforoosh@canada.ca
Nambara, Eiji	University of Toronto	eiji.nambara@utoronto.ca
Nash, Delaney	University of Waterloo	d2nash@uwaterloo.ca
Nasielski, Joshua	University of Guelph	nasielsk@uoguelph.ca
Nassuth, Annette	University of Guelph	anassuth@uoguelph.ca
Neller, Kira	York University	nellerk@yorku.ca
Nguyen, Jacqueline	University of Guelph	jnguye13@uoguelph.ca
Niaz, Ishrat	Pakistan Agriculture Research Council	FLAMGEMS@GMAIL.COM
Niemeyer, Caleb	University of Guelph	cniemeye@uoguelph.ca
Novikov, Ilya	Research institute of Agriculture of Crimea	i.nowikow2012@mail.ru
Nunn, Garrett	McMaster University	nunngm@mcmaster.ca
O'Gallagher, Bryden	Queen's University	13bog@queensu.ca
Oghenekaro, Abbot	University of Manitoba	abbot.oghenekaro@umanitoba.ca
Olszewski, Magdelena	Wilfrid Laurier University	Olsz9360@mylaurier.ca
Opoku-Nyame, Jeffrey	Université du Québec en Abitibi-Témiscamingue	jeffrey.opokunyame@uqat.ca
Ort, Nathaniel	University of Manitoba	ortn@myumanitoba.ca
Osorio, Evelyn	University of Saskatchewan	evelyn.osorio@usask.ca
Ouellette, Luc	McGill University	luc.ouellette@mail.mcgill.ca
Overton, Alyssa	University of Waterloo	akoverto@uwaterloo.ca
Overy, David	Agriculture and Agri-Food Canada	david.overy@canada.ca
Padda, Kiran Preet	University of British Columbia	kiranpreet.padda@alumni.ubc.ca
Padmathilake, Rasanie	University of Manitoba	rasaniep@gmail.com
Page, Serena	University of Guelph	spage01@uoguelph.ca
Paul, Angela	McGill University	angela.paul@mail.mcgill.ca
Pautler, Michael	Vineland Research and Innovation Centre	michael.pautler@vinelandresearch.com
Pawuluwage, Supun	Université du Québec en Abitibi-Témiscamingue	paws02@uqat.ca
Perry, Gregory	University of Guelph	perryg@uoguelph.ca
Perumal, Sampath	Agriculture and Agri-Food Canada	bioteksampath@gmail.com
Petersen, Christine	Thompson Rivers University Science	cpetersen@tru.ca
Phillips, Michael	University of Toronto	michaelandrew.phillips@utoronto.ca

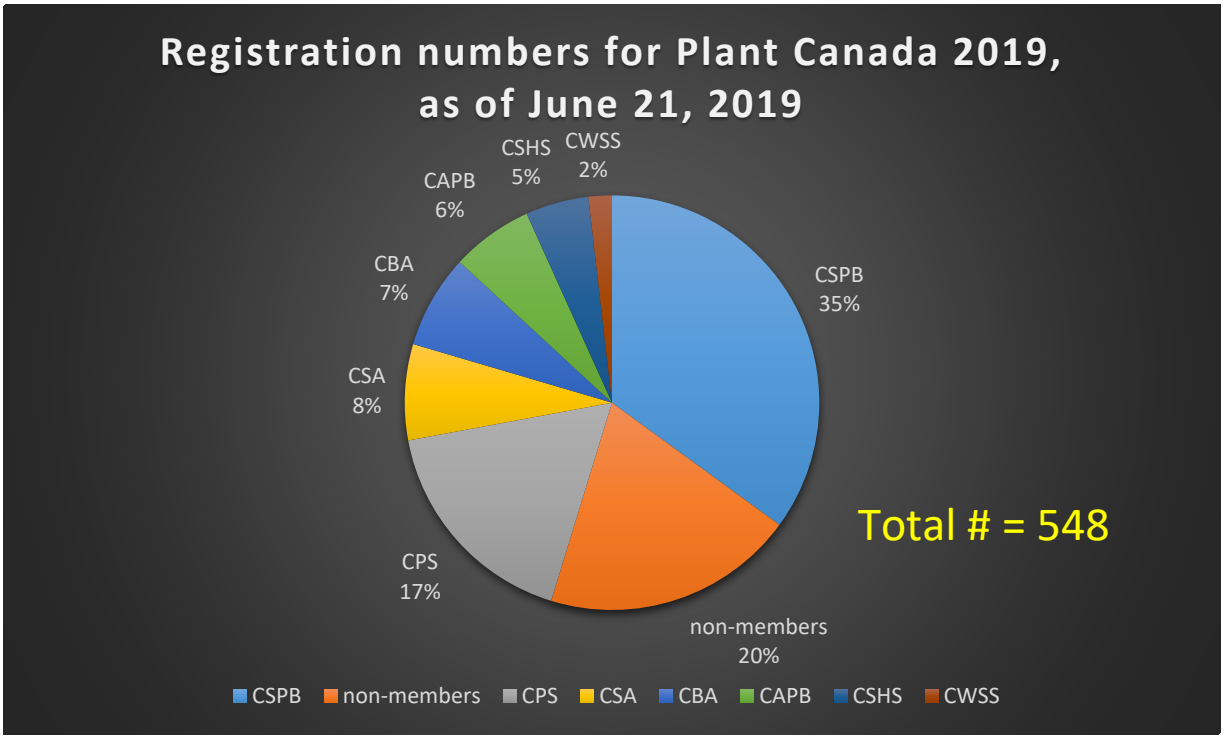
Pinder, Jessica	Vineland Research and Innovation Center	Jessica.pinder@vinelandresearch.com
Piunno, Kevin	University of Guelph	kpiunno@uoguelph.ca
Plaxton, William	Queen's University	plaxton@queensu.ca
Poel, Brian	LumiGrow Inc.	bpoel@lumigrow.com
Possmayer, Marc	University of Ottawa	mpossmay@uottawa.ca
Pradhan, Manika	Manitoba Agriculture	manika.pradhan@gov.mb.ca
Prashar, Pratibha	Bayer CropScience	pratibha.prashar@bayer.com
Punja, Zamir	Simon Fraser University	punja@sfu.ca
Puri, Akshit	University of British Columbia	akshit.puri@alumni.ubc.ca
Qaderi, Mirwais	Mount Saint Vincent University	mirwais.qaderi@msvu.ca
Queralta Castillo, Yudelkis Indira	Western University	yqueralt@uwo.ca
Quilichini, Teagen	National Research Council Canada	TeagenQuilichini@gmail.com
Rabas, Andrew	University of Western Ontario	arabas@uwo.ca
Radcliffe, Kirsten	University of Guelph	kradclif@uoguelph.ca
Rainu, Tarunpriya	University of Guelph	trainu@uoguelph.ca
Raizada, Manish	University of Guelph	raizada@uoguelph.ca
Rajcan, Istvan	University of Guelph	irajcan@uoguelph.ca
Ranjan, Syndhiya	University of Guelph	sranjan@uoguelph.ca
Rasool, Amilah	University of Guelph	arasool@uoguelph.ca
Ratcliffe, Sean	University of Guelph	sratclif@uoguelph.ca
Reich, Jonathan	University of British Columbia	jonathandreich@gmail.com
Reinprecht, Yarmilla	University of Guelph	yreinpre@uoguelph.ca
Renault, Sylvie	University of Manitoba	Sylvie.Renault@umanitoba.ca
Reynolds, Stephen	University of Guelph	sreyno01@uoguelph.ca
Robb, Jane	University of Guelph	jrobb@uoguelph.ca
Robleh Djama, Zeinab	Agriculture and Agri-Food Canada	zeinab.roblehdjama@canada.ca
Roscow, Olivia	University of Guelph	oroscow@uoguelph.ca
Rouet, Cindy	Vineland Research and Innovation Centre	cindy.rouet@vinelandresearch.com
Rowarth, Nathan	Dalhousie University	nathan.rowarth@dal.ca
Rowland, Owen	Carleton University	owen.rowland@carleton.ca
Rudland, Matthew	University of Guelph	mrudland@uoguelph.ca
Ryser, Peter	Laurentian University	pryser@laurentian.ca
Sabaratnam, Siva	British Columbia Ministry of Agriculture	Siva.Sabaratnam@gov.bc.ca
Sadowski, Mike	Carleton University	mike.sadowski@outlook.com
Salive, Kayla	Wilfrid Laurier University	kaylasalive@gmail.com
Samanfar, Bahram	Agriculture and Agri-Food Canada	bahram.samanfar@Canada.ca
Samur, Ivan	University of Guelph	isamursu@uoguelph.ca
Saunders, Diane	John Innes Centre	diane.saunders@jic.ac.uk
Saville, Barry	Trent University	barrysaville@trentu.ca
Saxena, Akansha	University of Guelph	asaxen01@uoguelph.ca
Sayem, SM	University of Guelph	ssayem@uoguelph.ca

Schellenberg, Michael	Agriculture and Agri-Food Canada	mike.schellenberg@canada.ca
Schuetz, Stefan	University of Toronto	stefan.schuetz@mail.utoronto.ca
Scott, Cameron	Simon Fraser University	cameron_scott_2@sfu.ca
Seck, Waldiodio	Université Laval	waldiodio.seck.1@ulaval.ca
Sedaghatkish, Afsaneh	University of Guelph	asedagha@uoguelph.ca
Seifi, Soren	University of Guelph	hseifi@uoguelph.ca
Sementchoukova, Irina	Queen's University	17is12@queensu.ca
Serajazari, Mitra	University of Guelph	mserajaz@uoguelph.ca
Serio, Renata	Dalhousie University	renata.serio@dal.ca
Shamriz, Shabnam	University of Western Ontario	sshamriz@uwo.ca
Shan, Shannon	University of Guelph	xshan@uoguelph.ca
Shao, Jianfei	University of Guelph	shaoj@uoguelph.ca
Shelp, Barry	University of Guelph	bshelp@uoguelph.ca
Sherif, Sherif	Virginia Tech	ssherif@vt.edu
Short, Will	University of Guelph	wshort@uoguelph.ca
Shrestha, Anuja	University of Guelph	ashrest@uoguelph.ca
Shukla, Devanshi	University of Guelph	dshukla4@uwo.ca
Shukla, Mukund	University of Guelph	mshukla@uoguelph.ca
Sidhu, Varinder	McGill University	Varinder.sidhu@mail.mcgill.ca
Sieburth, Leslie	University of Utah	sieburth@biology.utah.edu
Simkovich, Aaron	University of Western Ontario / Agriculture and Agri-Food Canada	asimkovi@uwo.ca
Simonton, Tina	University of Guelph Ridgetown	simontot@uoguelph.ca
Singer, Stacy	Agriculture and Agri-Food Canada	stacy.singer@canada.ca
Singh Brar, Gurcharn	University of Saskatchewan	gurcharn.brar@usask.ca
Singh Sahota, Tarlok	Lakehead University	tssahota@lakeheadu.ca
Singh, Jaswinder	McGill University	jaswinder.singh@mcgill.ca
Singh, Santokh	University of British Columbia	santokh.singh@botany.ubc.ca
Sirjani, Ramtin	Western University	rsirjani@uwo.ca
Sjonnesen, Kaitlyn	University of Guelph	ksjonnes@uoguelph.ca
Smith, Matt	Wilfrid Laurier University	msmith@wlu.ca
Snedden, Wayne	Queen's University	sneddenw@queensu.ca
Song, Jingpu	Western University	jsong267@uwo.ca
Song, Yashu	University of Guelph	yashu@uoguelph.ca
Soolanayakanahally, Raju	Agriculture and Agri-Food Canada	raju.soolanayakanahally@canada.ca
Soubeyrand, Eric	University of Florida	esoubeyrand2@ufl.edu
Sriskantharajah, Karthika	University of Guelph	sriskank@uoguelph.ca
Starr, Julian	University of Ottawa	jstarr@uottawa.ca
Stone, Sophia	Dalhousie University	sophia.stone@dal.ca
Stoochnoff, Jared	University of Guelph	jstoochn@uoguelph.ca
Storfie, Emilee	Trent University	emileestorfie@trentu.ca
Stout, Jake	University of Manitoba	jake.stout@umanitoba.ca
Strelkov, Stephen	University of Alberta	strelkov@ualberta.ca
Stricker, Sara	University of Guelph	strickes@uoguelph.ca

Strydhorst, Sheri	Alberta Agriculture and Forestry	sheri.strydhorst@gov.ab.ca
Sturby, Quinn	University of Saskatchewan	qjs078@mail.usask.ca
Subramanian, Jayasankar	University of Guelph	jsubrama@uoguelph.ca
Sufyan Tahir, Muhammad	Western University	mtahir25@uwo.ca
Sveshnikov, Dmitry	Memorial University of Newfoundland	dmitry.sveshnikov@grenfell.mun.ca
Swanton, Clarence	University of Guelph	cswanton@uoguelph.ca
Tabassum, Mourita	University of Manitoba	tabassu3@myumanitoba.ca
Tackaberry, Linda	University of Northern British Columbia	tackaberry.linda@gmail.com
Tang, Xurong	Performance Plants Inc	tangx@performanceplants.com
Tanguay, Philippe	Natural Resources Canada	Philippe.Tanguay@canada.ca
Tanino, Karen	University of Saskatchewan	karen.tanino@usask.ca
Tapp, Kyle	Carleton University	kyle.tapp@carleton.ca
Teitel, Zachary	University of Guelph	zteitel@uoguelph.ca
Teresinski, Howard	Queen's University	h.teresinski@queensu.ca
Tesfaendrias, Michael	New Brunswick Department of Agriculture, Aquaculture and Fisheries	michael.tesfaendrias@gnb.ca
Thapa, Raj	Western University	rthapa@uwo.ca
Thilakarathna, Malinda	University of Guelph	mthilaka@uoguelph.ca
Thompson, Laurel	Lakeland College	laurel.thompson@lakelandcollege.ca
Thompson, Michelle	University of Guelph	mthomp15@uoguelph.ca
Thornton, Kendra	University of Guelph	kthorn01@uoguelph.ca
Tian, Gary	Performance Plants Inc	tiang@performanceplants.com
Tian, Lining	Agriculture and Agri-Food Canada	lining.tian@canada.ca
Torabi, Sepideh	University of Guelph	storabi@uoguelph.ca
Torkamaneh, Davoud	University of Guelph / Université Laval	dtorkama@uoguelph.ca
Torrez, Alberto	University of Western Ontario	atorrez@uwo.ca
Tremblay, Émilie	Agriculture and Agri-Food Canada	emilie.tremblay@canada.ca
Tripathi, Rajiv	McGill University	rajiv.tripathi@mcgill.ca
Trueman, Cheryl	University of Guelph	ctrueman@uoguelph.ca
Tsai, Chia-Hsin	Taiwan Agricultural Research Institute	littlewhite0331@gmail.com
Tso, Heather	University of Alberta	htso@ualberta.ca
Turcotte, Marc-Antoine	University of Sherbrooke	Marc-Antoine.Turcotte3@USherbrooke.ca
Uhrig, Richard Glen	University of Alberta	ruhrig@ualberta.ca
Unterlander, Nicole	University of Guelph	nunterla@uoguelph.ca
Ur Rehman, Ateeq	Mount Allison University	ateeq283@gmail.com
Valliani, Moez	University of Guelph	mvallian@uoguelph.ca
Van Acker, Rene	University of Guelph	vanacker@uoguelph.ca
Van Brenk, Jordan	The University of Western Ontario	jvanbre@uwo.ca
Van Gelder, Kristen	University of Guelph	kvangeld@uoguelph.ca
Vanhie, Ted	University of Guelph	tvanhie@uoguelph.ca

VanVolkenburg, Heather	Brock University	hvanvolkenburg@brocku.ca
Varennes-Jutras, Philippe	University of Oxford	philippe.varennes-jutras@plants.ox.ac.uk
Varilla, Carolina	University of Guelph	cvarilla@uoguelph.ca
Vasseur, Liette	Brock University	lvasseur@brocku.ca
Vazan, Saeed	University of Guelph	saeedvaz@uoguelph.ca
Vazin, Maryam	University of Guelph	Vazinm@uoguelph.ca
Venglat, Prakash	University of Saskatchewan	prakash.venglat@usask.ca
von Aderkas, Patrick	University of Victoria	pvonader@uvic.ca
Walker, Philip	University of Manitoba	walkerp@myumanitoba.ca
Wall, Virginia	University of Saskatchewan	viw153@mail.usask.ca
Wally, Owen	Agriculture and Agrifood Canada	owen.wally@canada.ca
Wang, Haifeng	PlantForm Corp.	haifengw@uoguelph.ca
Wang, Le	University of Alberta	le7@ualberta.ca
Wang, Li	Gansu Agricultural University	39726821@qq.com
Wang, Liping	University of Guelph	lwang10@uoguelph.ca
Wang, Xiben	Agriculture and Agri-Food Canada	xiben.wang@canada.ca
Wang, Ying	Carleton University	yingwang4@cmail.carleton.ca
Wang, Yixiao	University of Alberta	yixiao2@ualberta.ca
Wasteneys, Geoffrey	University of British Columbia	geoffrey.wasteneys@ubc.ca
Wei, Bohan	University of Alberta	bwei1@ualberta.ca
Wilker, Jennifer	University of Guelph	jwilker@uoguelph.ca
Wilkins, Olivia	University of Manitoba	olivia.wilkins@mcgill.ca
Williams, Danielle	Brock University	dw15qi@brocku.ca
Willick, Ian	University of Saskatchewan	ian.willick@usask.ca
Wong, Cynthia	University of Toronto	cynthia.wongcy@gmail.com
Wylie, Andrew	Simon Fraser University	andrew_wylie@sfu.ca
Wytinck, Nick	University of Manitoba	wytinckn@myumanitoba.ca
Xu, Renlin	Agriculture and Agri-Food Canada	renlin.xu@canada.ca
Xu, Zhenhua	University of Toronto	Zhenhuazhh.xu@utoronto.ca
Xue, Allen	Agriculture and Agri-Food Canada	allen.xue@canada.ca
Yadav, Narendra	The University of Lethbridge	narendra.yadav@uleth.ca
Yancey, Sherry	Fluence Bio Engineering	David.hawley@fluencebioengineering.com
Yang, Bing	University of Missouri	yangbi@missouri.edu
Yang, Shujun	Performance Plants Inc	yangs@performanceplants.com
Yang, Xuan	University of Western Ontario	xyang323@uwo.ca
Yep, Brandon	University of Guelph	byep@uoguelph.ca
Yevtushenko, Dmytro	University of Lethbridge	dmytro.yevtushenko@uleth.ca
Ying, Qinglu	University of Guelph	qying@uoguelph.ca
Yogadasan, Nilanth	University of Waterloo	nilanth.yogadasan@gmail.com
Yoosefzadeh Najafabadi, Mohsen	University of Guelph	myoosefz@uoguelph.ca
Yu, Zhiyu	University of Alberta	zhiyu3@ualberta.ca
Zafari, Somaieh	Memorial University of Newfoundland	szafari@mun.ca
Zhan, Shuhua	University of Guelph	szhan@uoguelph.ca

Zhang, Yunxia	Zhongkai University of Agriculture and Engineering	yunxiaz@uoguelph.ca
Zhao, Liang	University of Saskatchwan	liz704@mail.usask.ca
Zheng, Youbin	University of Guelph	yzheng@uoguelph.ca
Zhou, Qingping	Southwest Minzu University	qpingzh@aliyun.com
Zhou, Qinqin	University of Alberta	qinqin@ualberta.ca
Zhu, Hong	Agriculture and Agri-Food Canada	hong.zhu@canada.ca
Ziegler, Dylan	University of Manitoba	Dylan.ziegler@umanitoba.ca



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