



CANADIAN ASSOCIATION FOR PLANT BIOTECHNOLOGY NEWSLETTER

2023

President's
Message

President's Message

Canadian
Association for
Plant
Biotechnology
(CAPB)

Dear CAPB members,

Another year coming to a close!

CAPB Conference
2022 Award
Winners

Great news, bad news... and great news for the Canadian plant biotech sector in 2023. One great news has been the much awaited adoption, on May 3rd, of the **new regulatory guidelines for gene editing and 'Plants with novel traits'** by the Canadian Government (<https://bit.ly/48c1IVV>), that promise to become a reference for plant gene editing and GM crops regulation worldwide. Another great news was the announcement, last August at the 15th International Association for Plant Biotechnology (IAPB) Congress in South Korea, of **the next IAPB Congress to be held in Saskatoon**, from 27 to 31 July 2026, under the leadership of CAPB Vice-president, and newly elected IAPB President, Pankaj Bhowmik (<https://iapb2023.org>). A bad news was the decision of Japan-based Mitsubishi Chemical Group, on February 3rd, to close Québec-based plant molecular farming company Medicago... A disappointing news that was finally followed, on December 8th, by the launch of a **new molecular farming company, Aramis Biotechnologies** (<https://aramisbiotechnologies.com>), to resume the development of plant-made vaccines in Québec City, based on Medicago's assets (<https://bit.ly/483Ohrd>).

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The coming year also promises to be a very busy period for CAPB and the Canadian plant biotech community – please MARK YOUR CALENDAR! Our **next CAPB biennial meeting will take place next summer** in Winnipeg, July 6–10, 2024, as part of the forthcoming Plant Canada Conference. CAPB is actively involved in the organization of this event, that will host CAPB-organized sessions in plant biotechnology and the exciting **Plenary session: Plant Biotechnology for a Changing World**, thanks to the efforts of CAPB Secretary Stacy Singer as a member of the conference scientific committee. The fourth season of our online **CAPB Seminar series** will take place in the first half of 2024, under the leadership of CAPB Seminar coordinator Allyson McLean. Last but not least, **Talk (and Scientific paper) competitions** will be launched in 2024 to recognize the talent and hard work of our postdoc and student members, under the leadership of CAPB Postdoc and student representative

Justin Boissinot, CAPB Webmasters Carly Charron and Jordan VanderBurgt, and CAPB Director of communication Dinesh Adhikary. Stay tuned next month for more details!

I wish you a happy and productive 2024 and look forward to meeting you next July in Winnipeg.

Dr. Dominique Michaud
CAPB President



Canadian Association for Plant Biotechnology (CAPB)

The Canadian Association for Plant Biotechnology (CAPB) is a registered non-profit organization in Canada. It is part of the International Association for Plant Biotechnology (IAPB), which was formed in 1970-1971 with the name of the International Association for Plant Tissue Culture (IAPTC) when the plant in vitro regeneration was a major research area in plant sciences. CAPB goals are to:

- a) Promote interaction among plant biotechnology researchers in Canada.
- b) Liaison with the International Association of Plant Biotechnology.
- c) Advocate for plant biotechnology research
- d) Bridge the gap between academia/basic research and industry
- e) Serve as a contact point for plant biotechnology-related information in Canada.

CAPB Conference 2022 Award Winners

CAPB hosted 13th biennial meeting in August 2022 in Quebec City. The main theme for the conference was Adaptation to Climate Change. The meeting was a great success.

Award winners in CAPB 2022

Lifetime Achievement Award

Dr. Alison Ferrie

Student Oral Presentation

First Position:

Jordan VanderBurgt (Western University)

Kallum McDonald (University of Alberta)

Second Position:

Sylvain Villot (Université Laval)
Samuel Gagnon (Université Laval)

Student Poster Presentation

First Position

Vincent Coulombe (Université Laval)
Eileen Barac (Western University)

Second Position

Adrian Monthony (Université Laval)
Aracely Maribel Diaz-Garza (Université du Québec à Trois-Rivières)

Student Research Paper Competition

CAPB introduced Student Research Paper Competition and encourage all eligible students to apply.

Awards: \$500 (number of awards = 2)

Submission deadline: March 31, 2024

Process

This award is presented to two outstanding research papers at the CAPB conference. All eligible papers will be evaluated by three experts following the criteria mentioned below. Winners of the award will be announced via email at least 4 months prior to the annual conference. Winners will be invited to attend the conference and present the data in an oral/poster format.

Eligibility

- Must be current undergraduate/graduate students or recent graduates who graduated on or After March 31, 2024
- Must be CAPB member
- Participants must be from Canada

Further details visit: <http://www.canadianplantbiotech.ca/capb-research-paper-competition/>

Virtual Seminar Series

In 2023, CAPB hosted a series of virtual seminars.

We would like to thank the following presenters for their time and contribution.

- a) Prof. Ed. Rybicki, University of Cape Town. Molecular Farming in Cape Town: An Introduction to the Biopharming Research Unit. January 26, 2023

- b) Dr. Hadrien Peyret, John Innes Centre, the use of Cowpea Mosaic Virus Capsids to Stabilise and Deliver Designer RNA Molecules. March 2, 2023
- c) Dr. Leena Tripathi, International Institute of Tropical Agriculture, Precision Genetic Technologies for Banana Improvement. April 6, 2023

Student Webinar Series

CAPB will be hosting a Student Webinar Series in the months of March and April in 2024. Student presentations will be held and recorded during Wednesdays or Thursdays at 3:00 PM EST. The presentations will be judged by a jury composed of researchers, postdocs, and students. It is an opportunity to showcase your research work and win an 'excellence award'. We will provide further details later in January 2024.

Please keep checking our twitter <https://twitter.com/CAPBCanada>

For further details, please contact Justin Boissinot, justin.boissinot.1@ulaval.ca

Researcher Highlight

Lead: Dr. Guanqun (Gavin) Chen

Dr. Gavin Chen's lab in Plant Lipid Biotechnology (<https://plb.ualberta.ca/>), Department of Agricultural, Food and Nutritional Science, University of Alberta

Dr. Guanqun (Gavin) Chen is an Associate Professor and Canada Research Chair (Tier 2) in Plant Lipid Biotechnology in the Department of Agricultural, Food and Nutritional Science, University of Alberta. He obtained his PhD in Plant Biotechnology from the University of Hong Kong and MSc and BSc in Fermentation and Biochemical Engineering from Tianjin University of Science and Technology, China. Drawing from his unique background in biochemical engineering and biotechnology, Dr. Chen leads the lab to investigate plant lipid biochemistry and biotechnology with sophisticated techniques.

The lab is advancing the basic scientific understanding of the lipid metabolism and its regulation in tandem with developing novel biotechnology strategies that aim to enhance desirable lipid and stress resistant traits in oilseed crops. Together with embracing collaborations with other researchers and industrial partners, the research in the Plant Lipid Biotechnology laboratory could make important contributions at economic, environmental and societal levels due to rapidly increasing demands for sustainable production of vegetable oils and value-added fatty acids to meet growing demands for food, biofuel, and oleochemical products.

Dr. Chen's publication record is most apparent measure by which to view these contributions to knowledge and application. Dr. Chen has published 81 peer-reviewed research articles during his career, including 48 peer-reviewed research articles published since 2015. The majority of these 48 research papers are published in journals that are highly recognized and highly regarded in the field of plant biology, biochemistry and biotechnology. Most of these papers have been co-authored with students and trainees in the lab, which echoes well with the awards and successful career development of lab members.

The ongoing projects in the lab consist of three areas of investigation (1) Biochemical and genetic regulation of triacylglycerol biosynthesis, (2) Production of value-added oils in crops and oleaginous microorganisms

via biotechnology, and (3) Development of canola with improved agronomic characteristics, including seed quality, yield, abiotic and biotic stress tolerance.



From left to right: Dr. Bin Shan, Dr. Gavin Chen, Kethmi Jayawardhane, Kallum McDonald, Elias Rietzschel, Juli Wang, Dr. Limin Wu, Qiong Xiao, Mianmian Zhu, Siyu Wang, Xiaoyu Wan

Industry Highlight

CropLife Canada

CropLife Canada represents the Canadian manufacturers, developers and distributors of pest control and modern plant breeding products. The organization's primary focus is on providing tools to help farmers be more productive and more sustainable. Its members also develop products for use in a wide range of non-agricultural settings, including urban green spaces, public health settings and transportation corridors. CropLife Canada is a strong, unified voice for the plant science industry advocating for an enabling regulatory environment for plant science innovations to drive the competitiveness and sustainability of the Canadian agriculture industry and communities. The organization's role as an association, and indeed as a country, in advocating internationally for science-based agricultural policies and rules-based trade has and will continue to be an important priority. Other priority areas of work include the following:

Building Public Trust

CropLife Canada engages with partners across the public trust space to maximize impact and help amplify positive messages about the safety and benefits of plant science innovations. Some of the work that has resulted from these partnerships include [Nature Nurtured](#), an education campaign about the safety and benefits of gene editing, and [Real Farm Lives](#), an online docu-series that profiles farm families from across the country.

The image shows a screenshot of the Nature Nurtured website. The top navigation bar includes the logo for Nature Nurtured, the text 'Real food innovation through gene editing', and a menu with items: 'Helping Canada Grow', 'Building Healthier Communities', 'Protecting Our Environment', 'Growing Our Economy', and 'Français'. Below the navigation, there are two main content areas. The left area is titled 'Canada is ripe for food innovation.' and discusses gene editing as a solution for healthier food and stronger crops. The right area is titled 'Helping Canada Grow' and discusses plant science innovations that help feed communities, protect the environment, and grow the economy. Below these areas is a black navigation bar with the text 'REAL FARM LIVES' and links for 'EPISODES', 'ASK A FARMER', 'REAL FARMING 101', 'MYTHS DEBUNKED', and 'FR'. The main content area features a video player for 'EPISODE 1 ORIGINS: POTATOES' with a 'WATCH NOW' button. The video description reads: 'What makes a PEI potato one of the best in the world? Join Gordie McKenna, a fourth-generation farmer in Newton PEI, as he tells the story of how this 'king of vegetables' makes the journey from the red soils of PEI to your plate.'

The benefits of plant science innovations

Plant science innovations like pesticides and biotech crops help Canadian farmers grow more food on less land and using the same or fewer resources, which supports sustainability. CropLife Canada makes a concerted effort to research, document and share the value of plant science innovations. Recently, the organization launched the [Helping Canada Grow report](#) which highlighted benefits such as enabling farmers to adopt conservation tillage and no-till farming. Such practices have resulted in saving an estimated 1.2 billion litres of fuel and 20 billion kgs of greenhouse gas emissions from being released into the atmosphere between 1996 and 2018, which is equivalent to removing about 13 million cars from the road for a year.

Plant science innovations also help to reduce food loss and waste, from farm to table, by combating diseases, insects and weeds. Without crop protection products and plant breeding innovations like biotech crops, farmers would need 44% more land to produce what they do today and consumers would pay 45% higher on average for many staple foods, an increase of \$4,500 annually per Canadian household.

Gene edited plants will further support sustainable agriculture. New gene edited plants under development have improved resistance to disease, are more adaptable to flooding or drought, and have improved nutritional qualities. Gene editing is part of the solution to tackling some of the world's greatest challenges such as malnutrition, climate change and fast spreading plant diseases.

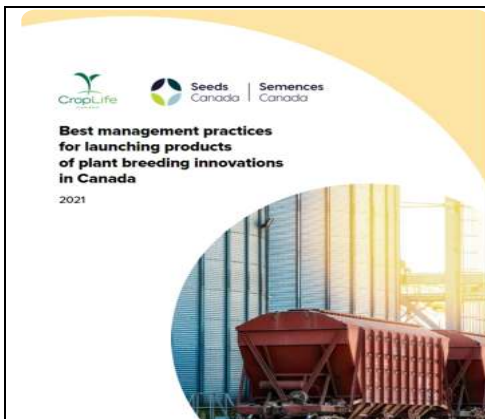
Stewardship: Going above and beyond

CropLife Canada has never lost sight of the importance of their commitment to the stewardship of plant science innovations. Canada's plant science industry takes pride in exceeding the country's regulatory requirements when it comes to the development, manufacturing and distribution of both pesticides and seeds enhanced through modern plant breeding. The organization do this throughout the entire product lifecycle to help farmers sustainably produce more of the safe, healthy and affordable foods Canadians have come to expect.

CropLife Canada runs training and education programs as well as develops best management practices to support the responsible use of technology. The organization continually look for new opportunities to show leadership, including:

- Building the [Manage Resistance Now](#) platform to support broad awareness and adoption of strategies to minimize weed, insect and disease resistance.
- Launching the [Protected Agriculture Stewardship Standards](#) to minimize risks from pesticide application.
- Developing [best practices for bringing plant breeding innovations to Canada](#), to support innovation and trade.

[Learn more](#) about the plant science industry's commitment to stewardship.



Current CAPB Executive Committee

Dr. Dominique Michaud, President
Dr. Pankaj Bhowmik, Vice-President
Dr. Rima Menassa, Immediate Past President as Observer
Dr. Stacy Singer, Secretary
Dr. Sangeeta Dhaubhadel, Treasurer
Dr. Dinesh Adhikary, Director of Communication
Dr. Susanne Kohalmi, Membership Director
Dr. Pooja Saxena, Industry Liason
Jennifer Hubert, Regulatory Affairs
Dr. Allyson McLean, Seminar Coordinator

Justin Boissinot, PostDoc and Student Affairs
Carly Charron & Jordan VanderBurgt, Webmaster

For further details (<https://www.canadianplantbiotech.ca/iapb-canada-executive-committe/>)

CAPB Memberships

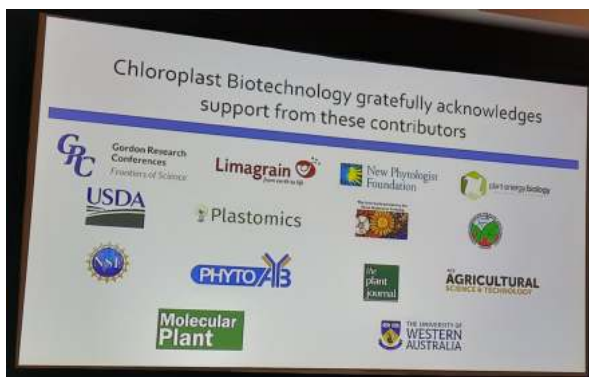
Please visit the CAPB website (www.canadianplantbiotech.ca) for information on how to become a member

CAPB members enjoy many benefits, including

- Reduced registration fees at CAPB and Plant Canada Conference
- Eligibility for student awards for oral and poster presentation
- Eligibility for student travel awards to CAPB and Plant Canada conferences
- Easy networking with the plant biotechnology involving academia, government and private industry

Access to job and career opportunities on the CAPB website, Twitter account(@CAPBCanada)

CAPB CONTRIBUTION



Logos of the sponsors including CAPB

CAPB was one of the sponsors of the Gordon Research Conference for Chloroplast Biotechnology in 2023. For more details, please visit

<https://www.grc.org/chloroplast-biotechnology-conference/2023/>

Academia & Government Job Search Links

- 1) <https://www.universityaffairs.ca>
- 2) <https://www.glassdoor.ca/Community/index.htm>
- 3) <https://ca.indeed.com>
- 4) <https://www.canada.ca/en/services/jobs/opportunities/government.html>
- 5) <https://www.higheredjobs.com>

Appendix A: Glimpse of CAPB Conference 2022



Keynote Speaker

Dr. Yafan Huang, CEO, Performance Plants Inc.

Title: Deciphering Key Genetic Regulators For Enhancing Crop Yield Under Increasing Global Climate Volatility



Panel Speakers, CAPB 2022

Kevin Gellatly, Bayer Crop Science

Jennifer Hubert, CropLife Canada

Allison McDonald, Wilfrid Laurier University

Stuart Smyth, University of Saskatchewan

Krista Thomas, Canada Grains Council



Dr. Rima Menassa, Immediate Past President



Dr. Dominique Michaud, Current President



Student Presenter (Carly Charron)



Vida Nasrollahi



Student Presenter (Jordan VanderBurgt)



Gamatat Allam (left) & Dr. Pankaj Bhowmik (Right)



Students participating in the Postdocs and Student Social Event



Students participating in the Postdocs and Student Social Event.

Acknowledgements

I would like to thank Praveen Khatri, Galamat Allam, and all the executive members for providing photos and content for this newsletter.

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