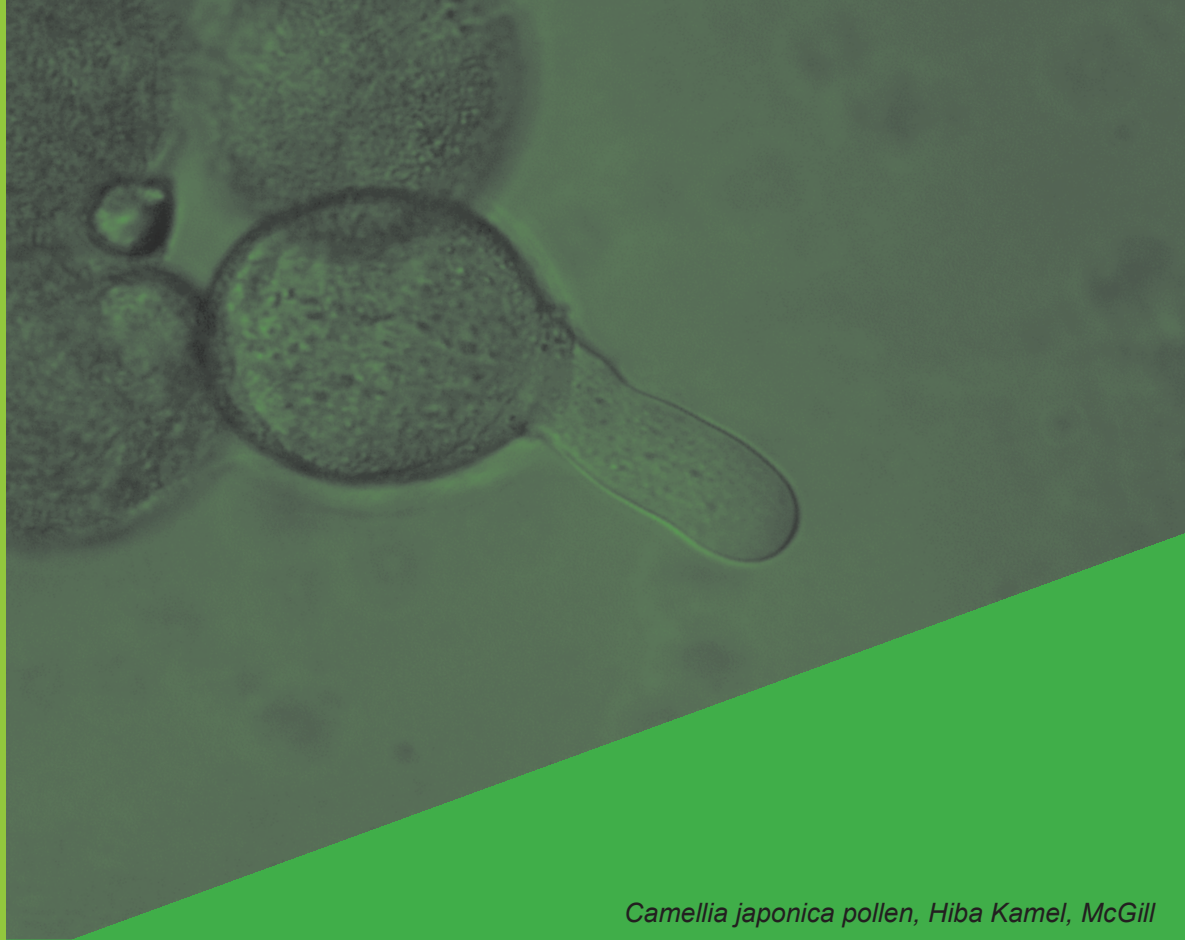
Bulletin

The Canadian Society of Plant Biologists
La Société canadienne de biologie végétale



Camellia japonica pollen, Hiba Kamel, McGill

JUNE / JUIN 2022

The Canadian Society of Plant Biologists
La Société Canadienne de Biologie Végétale

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Message from the President

Robin Cameron
McMaster University

Happy Spring! It appears that we may be transitioning from pandemic to an endemic! I'm grateful that we are spending more time on our campuses, institutes, in our offices and teaching in person. I'm really looking forward to seeing many of you at the joint ASPB-CSPB/SCBV conference, Plant Biology 2022 (PB22) in Portland, July 9 to 13th.

Here are a few reasons to attend Plant Biology 2022 in Portland.

1. **Joint CSPB-ASBP EDI plenary**, Science Without Borders: Migration, Domestication and Culture, which includes two Canadians, Dr. Allison McDonald and Dr. Edel Pérez-Lopéz
2. **CSPB-SCBV Award Talks:** Gold Medal - Dr. Vincenzo DeLuca, C.D. Nelson Award for outstanding research contributions to plant biology – Dr. Isabel Desgagné-Penix and Dr. Lauren Erland the Carl Douglas Prize for outstanding research by a post-doctoral fellow.
3. **Icebreaker lounge** in Exhibition Hall where ASPB's Cody Bekkering and his ASPB and CSPB-SCBV icebreakers will facilitate introductions and conversations.
4. **CSPB-SCBV Get-Together**, Monday July 11th, 7 to 9 pm at the Conference Centre, finger foods, cash bar. In response to the 2021 EDI survey, the CSPB-SCBV EDI committee will be running an icebreaker activity to facilitate mingling and introductions.
5. **PB 22 Party**, Tuesday July 12th, 7:30 to 11 pm with a fabulous band, "the Nines"
6. **Concurrent sessions** from submitted abstracts & community submissions
7. **Workshops** from community submission
8. **Portland is wonderful!** Great food, great public transit included in registration, Washington Park (nature trails & cultivated gardens), etc.

Virtual Annual Business Meeting (ABM) 2022, June 22nd 5 to 7 pm EDT

We've been getting great attendance at our virtual ABMs in 2020 and 2021, plus the PB22 schedule is jam-packed and not everyone will attend. Therefore, we decided to hold the 2022 ABM virtually on June 22nd starting at 5 pm EST. We heard from our Treasurer, found out who was elected to the vacant executive and committee positions, and announced the 2022 CSPB-SCBV awards.

Upcoming Meetings

2022 ERM at UTSC
2023 AGM, Laval University, Québec City
2024 Plant Canada, hosted by Canadian Phytopathological Society in Winnipeg, July 6th 10th
2025 Seeking volunteers
2026 PB26, ASPB-CSPB/SCBV joint meeting, Dalhousie University, Halifax

Special Virtual By-law Change Meeting, February 2nd 202

In response to the 2020 EDI Survey and in consultation with the EDI committee, the following changes to the By-laws were discussed and approved by the Executive, then discussed and voted on during the special meeting on Feb. 2nd. A total of 37 members attended the virtual meeting with eight members voting by proxy. The changes

were accepted by a unanimous vote. Sheila Macfie, our Treasurer, submitted the proposed changes to the Canada Revenue Agency and we are waiting for a response.

In case you missed the meeting, here is a brief description & rationale for the By-Law changes.
By-law 8 – CSPB Vice President chairs the new EDI committee.

By-law 10 – add another member to the Executive, to have both a student and a post-doctoral representative, to enhance early career member participation on the Executive.

By-laws 20, 21 – change wording for the Presidents', Directors' and Waygood Awards from best to top presentations so each award committee can decide on how many awards to give out.

By-law 24 – allow students to self-nominate to increase the number of nominations and also enhance the inclusiveness of the Ragai Ibrahim Award.

Bee resting on an aster flower, Andreea Bosorogan, UTSC

Open Letter to increase NSERC funding to graduate students and postdoctoral fellows

In February, the executive discussed, whether as President, I should sign on behalf of CSPB-SCBV, an open letter written by a number of scientists led by Steve Heard (President, Canadian Society for Ecology and Evolution) to the Prime Minister requesting that the government increase funding to graduate student trainees and postdoctoral scientists funded by the Natural Sciences and Engineering Research Council of Canada (NSERC). We voted unanimously that CSPB-SCBV sign this letter. Steve Heard is now asking that individuals also sign (see below) to enhance the impact of this request. Please consider signing.

To further convince the government that scientists and engineers across Canada support this request, we'd like to vastly expand the number of individual signatories. These can be faculty, postdocs, grad students, industrial scientists, etc. - basically, any member of your Societies. We would be grateful if you could share this letter with members of your Societies (as I will, in a few moments, with CSEE). Of course, we also encourage you to spread the word through your other networks, too.

Read the open letter online here: https://bit.ly/3vWWDQt.
Signatures can be added through this form: https://forms.gle/nGh2DLE3VynJZdh96.

Robin Cameron
CSPB/SCVB President

Message from the Vice President

Marcus Samuel
University of Calgary

It is almost a year since I assumed this role with CSPB-SCBV and I am quite excited to share the several changes that we have accomplished to make our society a more progressive and welcoming one.

The EDI committee is designed in such a way that members are rotated out regularly after a two-year commitment. EDI committee members for 2022-2023 are, Marcus Samuel, Mehran Dastmalchi, Tagnon Missihoun, Susan Murch, Eliana Gonzales-Vigil, along with Ryan Eng (post-doc member) and Hannah Brazeau (graduate student member). I would like to welcome the new members and look forward to their fresh ideas that could allow us to enhance equity, diversity, and inclusivity in the society.

I would like to sincerely thank the outgoing EDI committee members Jacqueline Monaghan, Adrian Monthony and Devang Mehta, for spearheading many of the constructive EDI-specific changes we are currently witnessing in CSPB-SCBV. These changes have made the whole organization more inclusive.

Some of the major accomplishments that this new movement has achieved in the society are listed below.

Compared to the composition of our executive committee in 2021 (42% women and 0% members of visible minority), our current executive committee (50% women) is quite diverse and is made up of a mix of BIPOC (33%) and Caucasian (67%) members. We have changed from 0% representation of visible minorities to 33%. Our aim was to achieve 22% representation from members of visible minorities by 2030 and I am proud to say that we have been able to exceed the 22% target in less than one year. This shows how open the society is for constructive changes and how eager the organization is to move toward being a more diverse and inclusive one. Representation of BIPOC in the 12 committees of CSPB-SCBV has also increased from 17% to 28% exceeding our proposed 22% target by 2030.

The group was able to finalize a mandate for CSPB-SCBV's Equity, Diversity and Inclusivity committee, which is now featured on the new web page. Another milestone achievement is provision of a French version of the official CSPB-SCBV bulletin, emails and conference communications. Through the committee's efforts, new opportunities for graduate students and post-doc involvement in CSPB-SCBV have been created by introducing a column dedicated to their voices in the bi-annual bulletin, offered in both official languages.

The EDI committee drafted a conference handbook that includes a collection of guidelines and resources to promote more inclusive conference planning. This handbook will be posted on the CSPB-SCBV webpage and will also be provided to the conference organizers during the planning stages.

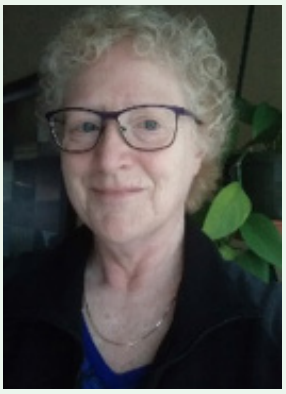
The EDI committee has also established new guidelines for judging posters and oral presentations at both national and regional conferences to reduce any potential bias while judging. These guidelines were implemented in the 2021 ERM and WRM meetings. Through a pre-conference meeting all the judges were informed about how to utilize the judging rubric so that unconscious bias may be prevented during judging and scoring of candidates. The EDI committee also reformed the nomination process for a number of society awards so that candidates are also able to self-nominate without a need for seeking their nomination by another member of the society.
I look forward to seeing the CSPB-SCBV participants at PB22 so that we can have some engaging conversations. We are proud to present Dr. Edel Pérez-López (University of Laval) and Dr. Allison McDonald (Wilfrid Laurier University)

who will be delivering plenary seminars in the first Science without Borders plenary session at PB22.

One of the best ways to get involved in the society is to become an active volunteer in the various CSPB-SCBV committees. If you are interested, please feel free to contact either myself (cspb-vp@cspb-scbv.ca) or our Senior Director, Mehran Dastmalchi (seniordirector@cspb-scbv.ca).

Marcus Samuel
CSPB/SCBV Vice President

Treasurer's News



I extend a thank you to all members who have been using our new website (https://cspb-scbv.ca/) to renew their CSPB-SCVB memberships. I am especially grateful to those who were patient as our webmaster worked out some minor kinks in the system. Automatic renewal notices on the anniversary of your last renewal should help to keep memberships on-track.
As always, I encourage you to consider donating to one of our many worthy merit Awards, the Duff Travel Bursary or the Ann Oaks Scholarship Fund: https://cspb-scbv.ca/Award-Donations1. Donations above $10 CAN will receive a receipt that can be used for tax purposes.

Sheila Macfie
CSPB/SCBV Treasurer

Enter to Win with Corporate Member: Agrisera

Time lapse series of the developing stamens in Arabidopsis. Daniel Kierzkowski, UMontreal

DEADLINE: July 18, 2022

One of our corporate members, Agrisera, developed a plant-based quiz for the CSPB-SCBV in celebration of Fascination of Plants Day (May 18). Participants can enter a draw to win a book on photosynthesis. Can you get a perfect score on the quiz?

Link to the quiz: https://agrisera-antibodies.typeform.com/CSPBQuiz

2021 Western Regional Meeting

Doug Muench
University of Calgary

Bailan Lu

Gamalat Allam

Gregory Robinson

Kallum McDonald

The Western Regional Meeting of the CSPB / SCBV was held virtually on December 3rd, 2021. The meeting was organized by Richard (Glen) Uhrig and Guanqun (Gavin) Chen (University of Alberta). Thank you Glen and Gavin! Over 100 registrants were in attendance, contributing 18 talks and 26 poster presentations. The meeting was highlighted by plenary lectures by Dr. Iris Finkemeier (University of Münster) on "Elucidating the roles of lysine acetylation in the regulation of plant metabolism" and by Dr. Pamela Soltis (University of Florida) entitled "Polyploidy and plant diversification".

The graduate student presentations were a reflection of the high-quality plant biology research that goes on in Canada.

Oral Presentation winners

- Kallum McDonald (UAlberta, Developing a rapid genetic screening platform from *Arabidopsis* to accelerate breeding for increased seed protein in canola)
- Gamalat Allam (UWO, miR156/SPL network negatively regulates aluminum stress tolerance in *Medicago sativa* by targeting SPL13)

Poster Presentation winners

- Bailan Lu (UBC, The transcriptional co-repressor SEED DORMANCY 4-LIKE promotes embryonic-to-vegetative transition in *Arabidopsis thaliana*)
- Gregory Robinson (ULethbridge, Micropropagation and transformation of *Cannabis sativa*)
- Poster Presentation Honorable Mentions went to Isabelle Massaro (California State University San Marcos), Solihu (Kayode) Sakariyahu (UManitoba) and Linh Nguyen (UAlberta)

Many thanks to the organizing committee members: Thu-Thuy Dang (UBC), John Laurie (Agriculture and Agri-Food Canada), Teagen Quilichini (National Research Council), Brendan O'Leary (Agriculture and Agri-Food Canada) and Stacy Singer (Agriculture and Agri-Food Canada). Thanks also to the many student presentation award judges!

We are planning to hold the next Western Regional Meeting in late 2023 or early 2024, where we will once again have the opportunity to re-connect with our western CSPB/SCBV colleagues!

Doug Muench
CSPB/SCBV Western Regional Director

2021 Eastern Regional Meeting

Sophia L. Stone
Dalhousie

Nathan Doner

Eduardo Rodriguez

Carly Charron

Natalie Hoffmann

The 2021 Eastern Regional Meeting was hosted virtually on Saturday November 27th. The meeting was organized by Shelley Hepworth, Owen Rowland, Tim Xing, and Catherine Cullingham from Carleton University and colleagues Rajagopal Subramaniam, Bahram Samanfar, and Jean-Sébastien Parent from Agriculture and Agri-Food Canada. An impressive 135 participants attended the virtual meeting, contributing 25 posters and 38 oral presentations. The proceedings began with remarks from society president Robin Cameron and an excellent plenary lecture by Catherine Cullingham (Carleton University) entitled “Using genomics to predict forest resiliency in the mountain pine beetle system”. Sylvie Cloutier (Agriculture and Agri-Food Canada) concluded the meeting with an insightful plenary lecture on “The challenges and promises of pre-breeding”.

Seminars were organized into six concurrent sessions, each with 6 presentations. Topics for the morning concurrent sessions included Biotic Interactions, Metabolism and Signalling, and Plant Development. The afternoon concurrent sessions covered Biochemistry and Cell Biology, Genomics and Systems Biology and Environment and Technology. Posters were available for viewing throughout the day, and presenters were available for discussion during the session after the lunch break. As always, our students and post-docs delivered outstanding presentations that held our interest and reflect an exceptional level of training and first-class research. The meeting wrapped up with the presentation of the student awards, two for best oral presentations and two for best poster presentations. Oral presentation winners are Natalie Hoffmann (“Alteration of xyloglucan biosynthesis disrupts endomembrane structure and function”, University of Toronto) and Carly Charron (“Production of plant-based vaccine candidates in *Nicotiana benthamiana* to prevent *Salmonella* infection in poultry”, Western University and Agriculture and Agri-Food Canada). Eduardo Ramirez Rodriguez (“Leveraging phosphoproteomics to uncover mechanisms of cell wall integrity signaling”, University of Toronto) and Nathan Doner (“*Arabidopsis* LIPID DROPLET PROTEIN OF SEEDS controls lipid droplet size and number in seeds and seedlings”, University of Guelph) were the winners of the best poster presentation awards.

On behalf of the Eastern Region and CSPB, a heartfelt thank you to the organizing committee, session chairs, and volunteers for an excellent event. A sincere thank you to all the judges that evaluated the oral and poster presentations: Robin Cameron; Christian Danve M. Castroverde; Sonhita Chakraborty; Eliana Gonzales-Vigil; Daphne Goring; Siwar Haidar; Susanne Kohalmi; Sara Martin; Jacqueline Monaghan; Adam Mott; Eiji Nambara; Bahram Samanfar; Elizabeth Weretilnyk; Tim Xing; Keiko Yoshioka; Rongmin Zhao. We are very grateful for the tireless efforts of all involved in making this a successful and well-executed meeting.

The 2022 Eastern Regional Meeting will be organized by Sonia Gazzarrini (Chair), Eliana Gonzales-Vigil, and Adam Mott (University of Toronto - Scarborough).

Sophia Stone
CSPB/SCBV Eastern Regional Director

CSPB Annual Meetings

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

2023
CSPB/SCBV Annual General Meeting, ULaval, Quebec City, E. Perez-Lopez & Dominique Michaud (Chair)

2024
Plant Canada, hosted by the Canadian Phytopathological Society, Winnipeg, MB July 6-10

2025
Call for Volunteers!

2026
CSPB/SCBV Annual General Meeting, Dalhousie University, S. Stone (Chair)

Upcoming Western Regional Meetings

Douglas Muench as the Western Regional Director is co-ordinating the scheduling of these events. Details to be announced.

Upcoming Eastern Regional Meetings

2022 University of Toronto Scarborough - S. Gazzarrini (Chair), E. Gonzales-Vigil, A. Mott

2023 Concordia University - J.S. Lee (Chair), P. Gulick, D. Dayanandan, W. Zerges

Sophia Stone as the Eastern Regional Director is co-ordinating the scheduling of these events.

Using Fluor-Pens at night to measure Fv/Fm on wheat spikes in the field.
Raju Soolanayakanahally, AAFC

Budding Ideas

Biofuels, Biomass & Big Mistakes?

Harley Gordon
PhD Candidate, University of Victoria
Edited by: Adrian Monthony, ULaval

Author Bio: Harley Gordon (he/him) is a PhD candidate in the poplar molecular biology lab of Peter Constabel at the University of Victoria. His doctoral work focuses on the biochemistry and metabolism of poplar defense metabolites known as salicinoids.

Carbon capture, carbon credits, and carbon sinks: all of these refer to processes or policies that aim to reduce atmospheric carbon dioxide concentrations which have been rapidly rising since the industrial revolution. As plant biologists, we work with the best atmospheric carbon reduction tools available. Using our forests for firewood and releasing the carbon they have so recently captured is not a prudent solution to our climate crisis.

A warming arctic, increased atmospheric CO2, and increasing energy demands mean there is no shortage of people looking for ways to mitigate climate change. An oft touted "green energy" solution to reduce carbon emissions is through burning biomass to release the stored chemical energy as heat, and subsequently converting the heat to electrical energy. Bioenergy, as it may be called, is claimed as carbon neutral. Superficially this makes sense as plants capture CO2 from the atmosphere, store it as carbon containing compounds, and release stored CO2 when burned. Plants cannot release more carbon than they capture. However, the moment the curtain is slightly raise, it becomes clear bioenergy is not neutral at all.

Combustible carbohydrates make up the vast majority of woody biomass used for burning, but CO2 is not the only emitted compound. Bioenergy plants release the greenhouse gas methane, along with volatiles like benzene and nitric oxides. Bioenergy plants are also not necessarily present where wood is harvested. In British Columbia, where hydroelectric power reigns supreme, 99% of wood pellets created in the province are transported away. Transportation is a significant source of emissions. The United Kingdom and Europe import a large proportion of biomass for bioenergy from the United States and Canada, which results in huge carbon emissions from transatlantic shipping, as transport ships rely solely on fossil fuel consumption. Bioenergy is promoted as a sustainable and efficient way to utilize forestry waste products; however, with current energy demands, waste products are not sufficient fuel sources, therefore timber is converted into wood pellets. In 2020 over 1% of the total timber harvest in British Columbia was used for wood pellet generation. That corresponds to harvesting about 5,500 acres of forest for what is effectively firewood in a single year, it will take 50-70 years before that forest can be re-harvested and 150-250 years before the forest would be considered mature. From an ecological and conservation standpoint habitat loss and biodiversity reductions are a major issue in heavily harvested forests. When an area of trees is harvested the land becomes a source of CO2 emissions for many years, as aerobic respiration degrades leftover biomass.

Finally, burning biomass is not particularly efficient for energy generation when land use requirements are considered. In optimal biomass production scenarios using high intensity poplar plantations in the pacific northwest, harvestable yields of wood can be generated in 10 years, providing on average 0.58 tonnes of dry biomass per acre. In terms of energy, that is about the mass required to generate 0.64 Megawatts (MW), but it takes a decade to generate. Using rough comparisons, one acre of intense forest plantation provides enough power for 600 homes for a year, or 60 homes for the 10 years it takes to grow the trees. However, experiments show that with such rapid growth, the sustainability of intense cultivation in the absence of fertilization is not guaranteed as a single 10 year harvest showed reduced soil nitrogen concentrations. Comparatively, an acre of solar panels can provide about 0.4 MW each year. Enough for 4,000 homes over 10 years. Power for 60 homes or power for 4,000; these are the differences we see in energy output per land area. Viable alternatives exist for energy production: solar, wind, geothermal, hydroelectric, and nuclear all produce less emissions per MW of power. We can capture carbon by either harvesting these forests for lumber or allowing them to grow into healthy mature ecosystems. A single acre of mature forest in the Pacific Northwest can store over 200 tonnes of carbon. Bioenergy plants result in emissions, they are lower than coal or natural gas, but they are still emissions. In a time of climate crisis, forests have more value in their capacity to sequester and store carbon than they do as a source of firewood.

Budding Ideas

Do You Know What 'First-Gen' Means?

Andreea Bosorogan
PhD Candidate, University of Toronto Scarborough
Edited by: Adrian Monthony, ULaval

Author Bio: Andreea (she/her) is a first-gen immigrant and a PhD student under the supervision of Dr. Eliana Gonzales-Vigil, in the Cell & Systems Biology department, at the University of Toronto Scarborough. When not in the lab, you'll find Andreea hiking, running, and taking pictures of plants and mushrooms.

Imagine you are asked to identify a first-generation (first-gen) individual among a group of students. Whom will you point to? It is not easy, right?

Diversity has received well-deserved attention over the past years in academic settings, but how does it translate to first-gens? First-gens come from a multitude of backgrounds and are most simply defined as the first in their immediate family to pursue a post-secondary degree. Although the definition makes it seem straightforward, it's not. The New York Times along with other publications have recently highlighted the definition's weaknesses. In short, it neglects to consider non-traditional family structures and the level of academic, financial, and cultural support needed to succeed in higher-educational systems. Additionally, these definitions ignore the elephant in the room - the term 'first-gen' is also used for first-gen immigrants, which is confusing!

Despite their differences, the two groups face overlapping invisible barriers. When navigating the academic system, both first-gen students and first-gen immigrants may be unfamiliar with the nuances of applying for program admissions or seeking financial aid. Many also come from low-income households. However, these groups do differ! First-gen students are statistically less likely to access post-secondary than first-gen immigrants.

With hopes of normalizing conversations about this topic, and raising awareness about the invisible barriers of academia that first-gen students and first-gen immigrants experience, I spoke with undergraduate and graduate students from the University of Toronto who identify as members of either group and this is what they had to share:

Information is not easily accessible

Everyone is lost, but some of us don't have a map: That is how it feels to be a first-gen. While applying to post-secondary, both groups lacked support and relied on the internet for information. Technology advancements have made this information more accessible to everyone, but how accessible is it truly? One of the students described the process as "time-consuming because you are always directed to another link." First-gens are not familiar with admission requirements, nor are they advised about the soft skills that help you stand out in graduate school applications. For instance, many students were only involved in research during their final undergraduate year, which lowered their chances of having publications, an important criterion if you apply for funding! Other key experiences like field courses are often unattainable for first-gens due to costs or because they "found out too late." One way of facilitating access for these students and preventing wasted time is to centralize information regarding what types of work and extracurricular experience supervisors look for in potential graduate students, key measures of scholarship beyond 'academic achievements', and other pertinent opportunities.

Post-secondary education didn't feel like an option

We live in one of the most educated countries per capita. By 2024, about two-thirds of job openings will require post-secondary credentials. It won't come as a surprise that the interviewed students felt like there was no option other than pursuing post-secondary education. Both first-gen groups indicated that their parents "wanted a better future for them." Some first-gen immigrants went on to explain their academic motivation was to help them better support their parents, who made sacrifices in migrating to Canada for their children's benefit.

Be aware of funding

It's no secret that graduate students do not earn much and some first-gen students simply cannot afford to get paid less during semesters when TA-ships aren't available. Most first-gens get part-time jobs to manage this deficit, but many wish they could TA instead because it "takes less time away from research." Supportive supervisors are key in such instances. Some students I spoke to were grateful that their supervisor understood "that money can be tight." Other supervisors encouraged and facilitated their students' pursuit of internship opportunities in graduate school. Institutions need to make more room for financial opportunities beyond stipends in order to turn surviving into thriving.

Navigating these systemic barriers is no easy task and this

article represents the tip of the iceberg. Post-secondary education contributes to social mobility and equality of opportunity in Canadian society; hence, nurturing those from less-privileged backgrounds is essential. The path to positive change for first-gen students is one that raises awareness of these issues, creates supportive and inclusive environments, and increases financial opportunities to help demolish invisible barriers.

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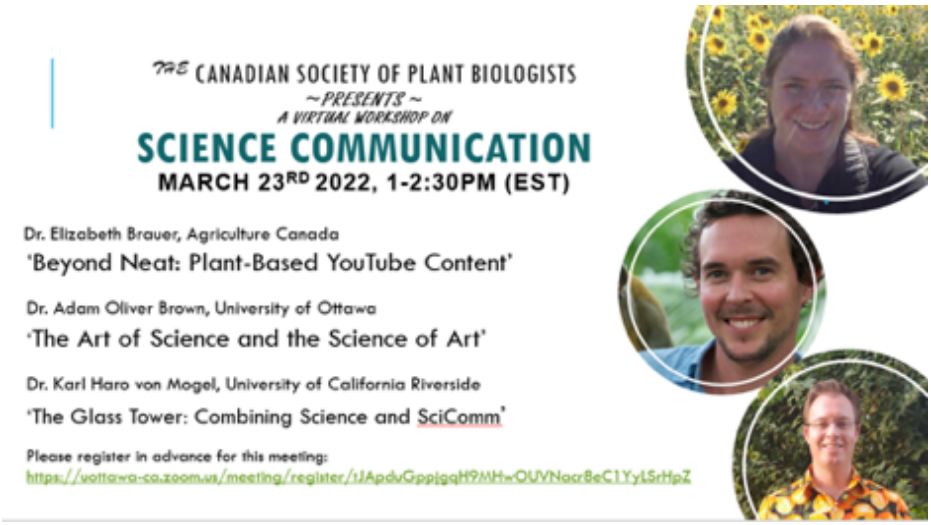
A CSPB Workshop on Science Communication

Liz Brauer
CSPB/SCBV Communications Committee Member, AAFC

Our recent virtual workshop on science communication featured three different perspectives on how to engage with the public, other scientists and students through video content. Our speakers had a range of experience working with platforms like TEDed, the Nature of Things and Biology Fortified to expose the fascinating world of plant science to the world. We heard from Dr. Brown, whose musician parents exposed him at an early age to the world of the performance arts, teaching him how to engage with an audience through story telling. He's combined his love of art and science to produce tv, radio and theatre content prior to becoming a professor at the University of Ottawa where he teaches courses on science communication and conducts research on pedagogy. Dr. Haro von Mogel spoke about his use of videos to conduct experiments on genetically modified plants and in his current work on citrus diseases. His work on establishing Biology Fortified as a platform to connect the public and researchers on discussions of plant biology and agriculture has provided everything from infographics and videos to adorable stuffed GMO corn. Dr. Brauer spoke about working with TEDed to produce an animated video on plant pathology, and her independent video production on scientific methods and concepts in the field. All three speakers touched on the fact that plant scientists at all levels of training can participate in producing content through these and other platforms, and that many avenues for practicing science communication. All you need to get started is a good idea!



Should we publish experiments with negative or inconclusive results?

Ainsely Lewis
Postdoctoral Fellow, Trent University

Being people of science, we all are on a quest for scientific truth. Fortunately, it doesn't matter how old you are as a scientist, that child-like curiosity never fades. Despite this, like many others, I observed a trend in reading many articles over time; positive results are published and preferred without reporting experiments with negative or inconclusive results. Rather, scientific publishing is biased towards publishing positive results. It seems as if we are socially conditioned to publish and read positive results.

I remember speaking with a colleague when we were both in the Environmental and Life Sciences graduate program at Trent University about publishing negative results and the importance of doing so. Why is it important to publish failed experiments and what can we learn? In our quest for scientific truth, failure is a crucial part of science. Without failure, there is no scientific progress. Isn't it strange that publishing experiments with negative or inconclusive or undesirable results is not yet normalized? It is not a mystery that scientists do long hours in the lab, often repeating similar experiments that may lead of inconclusive or undesirable results, which at times can lead to frustration due to wasting energy, time, money, and resources.

I believe that for most experiments, especially if similar/in the same field of study, for researchers worldwide, repeating similar experiments only to obtain negative results is a huge waste of time and can be avoided if negative or inconclusive experiments were to be published. Although there are a limited number of journals that publish negative results, the associated costs of publishing models (open access vs traditional) can add up. For example, some journals may request up to $5000 Canadian or more to get one article published! I also believe it should be the duty of scientists to publish negative experiments for the sake of science, with no associated publishing fees. A way to do this is do to this from a scientific societal standpoint is to solicit for membership contribution to develop a journal or archive for publishing. In using this approach, it would be on a voluntary basis and not forced.

Publishing experiments with negative or inconclusive results also improves transparency and academic honesty; it protects your reputation as a scientist. Although peer review is an integral part of science (if done properly and professionally), there could be different types of criteria for peer reviewing negative/inconclusive results such as reviewing the authors' detailed and clear explanations for why negative or inconclusive results were obtained. Perhaps publishing negative results should occur after publication of a related paper with positive results. In this way, your ideas/work would be protected in a publication.

An advantage to publishing experiments with negative/inconclusive results is that funding, especially for expensive experiments, is not wasted as publication of the data would be possible. This is important for professors, as obtaining funding is not always guaranteed. This helps in planning; you can stretch your dollar and focus on other experiments you may need to do in the future.

Sharing experiments with negative/inconclusive results can help science move forward at a more rapid rate. If we are to be cohesive as a science community, we should push for more negative/inconclusive experiments to be published. Perhaps we can use the power of social media to share our experiences and invite others to join this cause. Another way could be discussing this at scientific conferences as well, and network with others discussing this topic as well. Using these approaches can help others in our field to not have to repeat the same type of experiments that lead to inconclusive or negative results. Instead, publication of negative/inconclusive experiments may improve future experiments. Science is a self-correcting discipline and as such, we should make the effort to publish negative/inconclusive results. I predict that even in our CSPB-SCBV community, the advancement of science would be enhanced if this is encouraged.

Publishing negative/inconclusive experiments shows scientific integrity and transparency and can help other researchers to save on time, reagents, money, and other resources for the rapid advancement of science regardless of field.

Papaver rheoas, "Falling in Love", Sara Clarke, Trent

CSPB Inside

CSPB / SCBV Executive Committee Membership 2022

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Committee Members

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Peta Bonham-Smith (USask) 2024
Yang Qu (UNB) 2026

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Robin Young (UBC) 2024

EDI Committee
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Adrian Monthony (Guelph) 2021
Devang Mehta (Alberta) 2021

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Carl Douglas Prize Committee
Chris Ambrose (Saskatchewan) 2022 Chair
Christian Castroverde (Laurier) 2023
Valerio Hoyos-Villegas (McGill) 2024

Contributors

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Layout & Production

Susanne Kohalmi & Lauren Erland

Thank you to all of our photo contributors for this issue including our student award winners!

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We always love to hear from you! Please submit your contributions, comments, photos, suggestions for featured papers, new faculty bios, new ideas and announcements before the editorial deadline to:

admin@cspb-scbv.ca

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