

Building an online collaborative environment for graduate researchers' development: the 2020 Montreal Photonics Networking Event

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Abstract: This paper discusses motivations and challenges behind the online transition of the Montreal Photonics Networking event. Design, organization strategies, and outcomes of this educational and community-focused activity are presented. © 2021 The Author(s)

1. Introduction

Montreal is home to a strong network of multiple companies and six universities with photonics activities, driving regional economic development through the many students and professionals pursuing careers [1]. Despite this, no coordinated structure exists for peer-to-peer development of graduate research students amongst the academic research institutions in Montreal. The Montreal Photonics Networking Event seeks to address this by creating a collaborative environment for graduate researchers' development. Section 1 of this paper describes the event's background, including mission, organization strategies, as well as method for building audiences for the event. Section 2 details the design of the online environment for knowledge exchange and creation, with specific focus on interaction between graduate researchers, presentations, and audiences. Finally, section 3 presents the outcome of the event, supported by lessons learned and best practices for the reader looking to emulate similar collaborative online educational events.

2. Background

The Montreal Photonics Networking event was formed in 2015 as an annual event to address the lack of a coordinated network for research student exchange. The event's mission is to bring together graduate students to (1) establish a way for students to discuss life as a photonics researcher, (2) enhance research synergies, and (3) connect with the industry for further career development. This section describes strategies for setting up the event and building an audience.

2.1 Organization and Partnerships strategies

The organization committee is composed of student representatives from each of the six Montreal universities, as well as representatives from industry, academia, and the province's photonics cluster. The Authors of this communication were all members of this committee for the 2020 edition. Expectations are to provide input at meetings, propose keynote speakers and poster judges, help seek funding and event partners, and promote to students and early-career researchers within each university and available networks. Developing appropriate partnerships with stakeholders in the development of graduate students has been critical. These are city-wide networking associations (IEEE Montreal), strategic research consortiums (INTRIQ), photonics clusters (Optonique), private partners (Excelitas Technologies), as well as international professional photonics associations (SPIE). Local student photonics associations and chapters of IEEE, OSA, SPIE, further increase visibility amongst the target audience, as well as being a resource for sustaining rotation amongst the organization committee.

2.2 Building an audience

A few notable features are used for this event to attract participants. Keynote speakers from the local industry are invited to present on a range of topics, ranging from family-owned business in the telecom for aerospace (Jane Bachynshi, MPB Communications, 2020), to startups operating in the optical imaging sector (Caroline Boudoux, Castor Optics, 2019). Sponsored prizes for presenting graduate researchers are used, as well as other strategies such as linking to undergraduate coursework requirements or school outreach events. Social media promotion is conducted via LinkedIn and Facebook, most notably to give potential attendees perspectives into education opportunities— see Figure 1 for photonics courses available to all graduate students in Montreal via the CREPUQ university cooperation office. Event communication is done via email through each institutions’ representative, allowing for organic growth of participants.

Figure 1. Graduate photonics courses in Montreal for the sessions of (a) Fall 2020, and (b) Winter 2021.

2.3 To network or not to network online?

As sanitary restrictions imposed by the provincial government looked set to stay throughout the Fall of 2020, the pertinence of a “regional networking event” was questioned. How do we make research accessible and visible in a region? What tools can be used and what does the format look like online? Is there value in “digital networking”? The event’s vision is to build a space for information exchange and creation; the following section describes how the online edition was redesigned to cater for graduate student researcher development in an online environment.

3. Online event design

Three IT platforms were used: Zoom, for the keynote presentations; Remo.co for the networking and research exchange; and Google Drive for building a presentation repository. The motivation for their use is discussed in the following subsections.

3.1 Interaction with Researchers

The Remo.co platform was used to enable communication between graduate researchers and the audience. The goal is two-fold: to create timely exchange, as well as provide visibility and accessibility. The accessibility, ease of use, engaging content, and interactive nature were found to reproduce the interaction, closeness and bustle of in-person events. All presenters were required to be present at the online event to be eligible for prizes. This platform allowed the committee to create spaces for technical and social discussion.

3.2 Interaction with Research presentations

The organizing committee wished to create an environment that would enable good storytelling of the research. A multi-platform approach was used to consolidate presentations and space to meet. The Google Suite was used to managed submissions and the presentation repository, with a centralised interactive program to access these ahead of the event that contained (1) a 100-word written abstract, (2) a 45 second video abstract, (3) a static set of 4 research slides. The poster judges were asked to submit their results through Google Forms as well.

3.3 Interaction between audience members

The platforms described above facilitated dialogue between audience members. In addition, Zoom Video Conferencing was used to host the plenary talks. Through a combination of interaction in chat, the ability to use video and sound to interact with plenary speakers and other audience members, this was used to reinforce connections and conference-wide messaging.

4. Outcomes and lessons learned

4.1 Outcomes

The event was run as a half-day activity, following the schedule presented in Table 1. Attendance at the graduate research exchange was of 20 presenters, 15 judges, including 2 keynote speakers from the industry, for a total of 70 participants for each of the sessions outlined in Table 1.

Table 1. Breakdown of event type, duration, detail and platform used in online format.

Duration	Type	Detail	Platform
5 minutes	Community rules	Welcome	Zoom
45 minutes	Technical presentations	Keynotes	Zoom
30 minutes	Professional development	Career panel	Remo
60 minutes	Technical development	Presentation session	Remo / Google Drive

The transfer to the digital format attracted new participants, as well as a retention rate of 25% of presenters (5 participants) from the 2019 in-person event. The success of the event in 2020 has contributed to sustained leadership, with the organising committee retaining 7 of its 9 officers for 2021. Partnerships with sponsors and platform partners were maintained from the in-person to online events, and discussions are ongoing to continue these for the 2021 event. Marketing was done by email via the organizers' broad academic networks in the 6 weeks leading up to the event; marketing on social media (Facebook and LinkedIn) was done via individual accounts, with an estimate of over 5,000 organic views of related-content in the 3-month period leading up to the event.

4.2 Lessons Learned and future perspectives.

The event was evaluated by the Authors to assess positive outcomes and areas of improvements. A committee with student representatives from each of the universities ensured participation from all Montreal photonics research centres. The combination of the events for the career panel, diverse keynote, and social interaction was also perceived positively, and all presenters were engaged throughout the sessions. No follow-up evaluation was done, although anecdotal evidence found that attendees and committee members have continued to make use of contacts from the event through participation with sponsoring partners, as well as local podcast features between attendees – see for instance podcasts #2 and #3 of <https://anchor.fm/jsboivert-fdaoust> (French only). This was echoed in the 2020 career panel where panellists expressed that they had built and sustained meaningful contacts between events.

It took time and dedicated sessions to prepare participants to learn the Remo.co platform. Challenges faced were of online motion sickness and sustaining active audience participation. Improvements can be made with more focused online training and tutorials. Allocation of transition time buffers between sessions and dedicated staff to assist for software and connectivity troubleshooting is crucial. Consolidating into a single teleconference platform for smoother transitions between sessions is another strategy. Meeting rules must be set up front and reminded of regularly, and the use of private and dedicated areas for relaxing should be encouraged. Timing and duration of the research exchanges was also a challenge, which will be addressed ahead of the 2021 edition. Further partnerships could involve inviting photonics companies to set up booths, which will add more value to our event as graduate students are always looking for career opportunities.

Through this virtual event, we found that people still need opportunities to connect with people with common interests, including peer-to-peer, industry-academia, and mentor-mentee. A positive synergy between participants on the platforms was noted, and it was enjoyable and fun that every team member collectively contributed towards a successful event.

[1] Optronique, "Photonics: a portrait of Quebec's industries," (2019), retrieved from <https://optronique.ca/wp-content/uploads/2020/01/Rapport-executif-ANG-Final.pdf>