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A lot has changed over the last year. Death, disease and fear have become the backdrop of our existence, interspersed with frustration, impatience and anger. Cancelled events, immigration snarls, online teaching, cheating in virtual exams are common a airs – but mere trivialities compared with far more serious outcomes, like the loss of loved ones, separation from family afar or in a care facility, struggles with mental health or addiction challenges stemming from isolation. Masks and personal protective equipment are now part of standard gear. Hugs and handshakes are out. Foot bumps and Vulcan salutes are in. Even our vocabulary has changed. There is a lot of “coronaangst”; everyone is “overzoomed”.

They say the end is near. As vaccines roll out across the world, as restaurants, daycare centres, museums and concert houses re-open and the economy rebounds, the memories of the past year and a half will become (one hopes!) a distant nightmare, joining the ranks of the plague, Spanish flu and SARS as a topic of conversation over the coffee table, or as a historical narrative for future generations alongside tales of war, famine and natural disasters. We just can't wait for *normal* to be back.

What would post-pandemic normal look like in academia? Probably similar in many ways to what it was before 2020. The bustle of campus life teeming with students, rushing around between classes and meetings, fighting a losing battle against deadlines, diving into seasonal letter-writing and grant-writing frenzies, preparing for lectures, planning to attend conferences, dreaming of a quiet spell away from the daily grind to complete a long overdue research project.



Before turning away to better days ahead, were there any silver linings in the COVID stormcloud, any positives at all worth carrying forward?

- *Mathematicians in the news.* We knew mathematics was important; it was hard convincing the public that it was more than just university calculus. COVID has changed that perception. Our colleagues across the country (like Professors Chris Bauch (Waterloo), Caroline Colijn (SFU), Dan Coombs (UBC), Jane Heffernan (York) to name only a few), and indeed across the world, have made compelling commentaries on the pandemic in national [1] and international media; not just educating the public about the spread of infectious diseases, but using their expertise to guide policy decisions on public health measures and travel restrictions. They have brought increased attention to the role of mathematical sciences in epidemiology and health sciences, and the role of mathematical modelling in public health. Their conversations with the media have re-emphasized the need of mathematical

education and numeracy for the general public to better understand the policies, the details and the rationale of vaccine rollout. Most importantly, mathematics is now being used in issues that would have previously fallen under the jurisdiction of ethics or social justice. Nuances of how vaccines ought to be rolled out in order to optimally control COVID among the population, the order of different age groups and different professions in the priority queue for vaccination are critical yet sensitive debates where mathematicians have made impactful, evidence-based contributions [2].

- *Women and visible minorities in leadership roles.* Despite severe challenges faced by certain demographics in many professions, there are now a number of inspiring role models from under-represented groups in the upper echelons of science, technology, academia and industry leading the charge against COVID. Scientists, drug developers and policymakers like
 - Dr. Theresa Tam (Canada's Chief Public Health Officer [3]),
 - Dr. Bonnie Henry (British Columbia's Provincial Health Officer [4]),
 - Dr. Supriya Sharma (Canada's Chief Medical Adviser [5])
 - Dr. Kizzmekia Corbett (Leader of COVID Vaccine Development team at Moderna [6])
 - Dr. Akwatu Khenti (Leader of Black Scientists Task Force on Vaccine Equity [7]),

existed before the pandemic. But they made life-saving pharmacological breakthroughs or policy decisions in relative obscurity. Now they are much more visible in the media, their work recognized and appreciated more widely, inspiring many young women and youth from under-served communities to consider careers in STEM. The pandemic should fade away, but not our appreciation of such role models.

- *Teaching and research online.* One of the most dire consequences of COVID has been the loss of physical contact. A semblance of work and activity has come about through the universal adoption of online meetings. While certain dynamics of in-person interactions may not be easy to replicate in an online setting, new avenues have opened up for sharing of thoughts and ideas. The shift to online meetings has welcomed the world to join a common platform, sidestepping immigration hassles, eliminating airfares, and most importantly giving access and opportunities to people with geographical, physical, financial or personal constraints that prevent them from travelling to conferences or pursuing a degree in a foreign land. I am reminded powerfully of a fellow mathematician who, as primary caregiver of a family member with special needs, had not been able to attend a conference in decades, and who can now participate in as many virtual talks and workshops as their time and interest will allow. Even with all the goodwill to build an inclusive conference, there was no pre-pandemic mechanism to include people with such challenges; they were marginalized, their requirements deemed too expensive, too specialized to provide meaningful support. Before the pandemic, you had to be at the right place at the right time to be part of a research breakthrough or enjoy the benefits of a great educational program. Not any more.

One hopes, at least in this case, for some positive change once the pandemic ends. In fact, this shift had already happened outside academia before the pandemic. Large scale research and development teams at tech companies like Google and Amazon solved problems (many of them mathematical!) working remotely. The pandemic has merely demonstrated that collaboration is possible even without physical proximity. As conferences and workshops start up again, as mainstream academics revel in the joy of human contact and in-person intellectual exchange, let us leave a channel of participation open to members of our communities who, by choice or circumstance, may not be able to physically join in the celebration. Let's go hybrid.

The pandemic has put a spotlight on many things, among them the power of science and technology, international collaboration and human resilience. It has also highlighted the stark realities of inequity, in gender [8, 9], in race [10, 11], and mostly in socio-economic privilege. Amidst millions of lost jobs, most university faculty are still employed. Most of us have not needed to put ourselves at risk on the frontlines every day. Many of us have the ability to work from home, migrate our meetings and courses online, work on problems that do not rely on field data. Others have not had that luxury. Young people such as our students and postdocs have also faced a very different reality. Not at liberty to put their academic progress or career trajectories on hold, they have made a virtual entry into post-secondary institutions or into the job market, and have had to adapt to a life completely at odds with their dreams and expectations. Many have done so with a growing sense of isolation, lack of human contact or adequate infrastructural or emotional support. They deserve at the very least empathy and understanding. Thanks to technology, windows have opened as doors have closed, providing glimpses into worlds that were invisible to us before the pandemic. As we move towards a COVID-free future, let us not lose sight of these worlds.

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