

McGILL WOMEN IN PHYSICS (WiP): BOTTOM UP EDI

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Our story begins around 2011 and is closely related to the changing number of women faculty in the department. Though McGill physics' first female faculty member was Dr. Ana McPherson who started her career in the 50s, there was a subsequent "drought" between 1970 and 2000. In the recent two decades, the department has hired numerous excellent women physicists, including eight who have joined the faculty in the last nine years. We are currently a department of 46 faculty with 11 women professors. The change to our department atmosphere can be felt, but not quantified. While the numbers themselves tell some of the story, we believe that the actions of our group have played an important role in reshaping the experience of our department members. We tell our story here while highlighting the initiatives taken by the McGill Women in Physics (WiP) group. We also discuss the process we have undertaken to evolve our mandate from a small WiP group to an EDI committee. We hope these narratives will benefit other departments.

EARLY DAYS

One of our authors arrived in the department as a new faculty member around 2011. Meeting with the other three female professors at the time, we felt that we should 'do something' for the female students. We thought our students might be looking to connect with other women physicists to create a sense of belonging. We also thought that while we're only four, there are many inspiring

women going through our department as visitors. We therefore started the 'WiP-breakfasts'. Whenever a colloquium or seminar speaker happened to be a woman, we scheduled a breakfast gathering with her. The breakfasts were a big hit. They were advertised as highlighting the experiences of women physicists but were open to everyone. And many people came — mostly women, mostly graduate students. It was clear that the students were craving a network and ways to feel welcome in the department. Many volunteered to help and within a few weeks the operation was run exclusively by volunteer graduate students.

FORMING STRUCTURE

It must have been an unusual sight for our colleagues to walk into the staff lounge and find a group of 20-30 women discussing their research, their lives and anything in between. The responses were mostly supportive, and importantly, the department chair embraced and encouraged our efforts. Another new faculty member took over the breakfast club and formed the WiP committee. The committee was made up of herself and a dedicated team of students, both graduate and undergraduate. Within a year the WiP committee became an official committee of the department, and it was now up to the chair to nominate the faculty committee members who then recruited student members. Moreover, this was recognized and counted as service work for the faculty. A couple of years later we asked for and received a paid position with salary equivalent to a standard teaching assistantship and from then on a graduate student was selected as the committee's coordinator. These structural differences were the department's way of showing support and allowed us to devote more time to this work and to broaden our scope.

GROWING INITIATIVES AND ACTIVITIES

A burst of new activities came with the new structure. This has many axes, but in broad strokes can be divided into in-reach and out-reach. The first of these aims to continue making the department a more equitable and inclusive environment, while the second aims to encourage young women to join the sciences.

SUMMARY

A decade ago a group of McGill faculty organized a few events centered on women physicists to help them feel more at home in the department. The WiP initiative was met with excitement from students and support from the department. Over the years, the group assumed more responsibility, became an official departmental committee, and has recently broadened to become an EDI committee. This group testimonial describes our still-evolving history.

Inreach: social events — We continued our WiP breakfasts and other events and even engaged the whole physics community through a pub crawl, where discounted drinks at bars around the McGill area were given to ‘I love WiP’ t-shirt wearers.

Inreach: education — We know that creating a better environment takes all of us. But is our community aware of implicit bias? Imposter syndrome? How stereotypes affect one’s behaviour? We invited EDI experts to talk to the department. Importantly, this was done as part of the physics colloquium series, and for the past few years, a special EDI colloquium has been presented annually. Our first speaker has written her own article in this issue (see Allison Gonsalves’s paper)!

Another educational activity was the creation of the WiP “Equity Lending Library”, situated on a few shelves in the staff lounge. Moreover, physics-department focused EDI workshops were organized separately for students, staff and faculty. The workshops have been offered by McGill’s equity office, covering topics such as “Becoming an Active Bystander”, “Equity 101”, and “Employment Equity”. All of these workshops are available through other channels at McGill, but bringing them into the physics building made it easier to attract the physics audience and we enjoyed broader participation at all career levels.

In addition to the workshops, our members were also requesting a forum in which to have more regular discussions about issues at the intersection of EDI and education. The McGill Space institute, a research center closely affiliated with the department of Physics, had a weekly Education, Public Outreach, and Diversity (EPOD) discussion group. It had been running for a couple of years. In collaboration with members of the WiP committee EPOD broadened both its scope and its audience. Not only is it now open to members of the Physics department from fields beyond astrophysics, but it also discusses a broader range of topics. EPOD is meant to give people a space in which to learn about and talk about how EDI issues intersect with academia and education. It’s also a forum in which to source best practices towards making the department a more inclusive and welcoming space for underrepresented groups.

We have also begun to work on making our space more welcoming. Our walls were decorated with pictures of past distinguished public lecturers. None were women, none were Black . . . you get it, the usual non-diverse roster. We purchased the ‘Beyond Curie’ series of posters Amanda Phingbodhipakkiya, framed them and added them to our decoration.

Inreach: EDI policies — With volunteers and coordinators we felt it was time to tackle another problem. While the Quebec government and McGill provide a generous parental leave to its employees, students who become parents do not have any guaranteed support. We therefore started to study the issue and found that funding agencies can provide parental leave payments to students who are paid through a scholarship or a grant. This was not known broadly, at least not in our department. Moreover, in some cases the students were not eligible. Together with the department chair we wrote a policy that ensures coverage — either by the funding agencies or through departmental funds. The policy is advertised on our website.

Outreach: education — Our department does not exist in a bubble: stereotypes and bias are internalized early in life [1], prior to joining our department. We have teamed up with Dr. Gonsalves from the McGill Department of Education to design 90-120 minute seminars on topics of EDI for local secondary colleges. These sessions each serve 10 to 200 students and some staff and faculty. Paid graduate physics students offer peer-to-peer discussions on explanations of discrimination in physics and STEM, equality versus equity, imposter syndrome, stereotyping, and biases. By engaging students in discussions on social issues within the physics community early on, students feel less isolated in this field [2,3]. We offer repeat seminars as well as panel discussions, which bring physicists in different careers to share their experiences in the field and answer students’ questions. Surveys conducted with our audiences show an improvement in EDI knowledge and interest in physics careers.

Outreach: Women in Physics Canada (WIPC) Conference — In June 2019 our department hosted the 8th edition of WIPC, attracting 147 participants to Montréal for three days of science exchange and connection. The main objective of this edition was to support and encourage junior physicists who identify as a gender minority or underrepresented group to persist in the field. Led by a team of graduate students supported by our department staff, the organization took an intersectional approach, centering conversations about mental health in academia, the LGBTQI+ climate in STEM, justice and equity in physics, and promoting a field inclusive to identities beyond the gender binary. In addition to featuring scientific presentations by leaders in physics, junior scientists, and students, we provided networking opportunities in the form of regular breaks and meals catered from local vendors with sustainable practices. Feedback from participants was overwhelmingly positive, with majority of respondents commenting that they felt a sense of community, found the environment welcoming, and appreciated the schedule for its balance between science and equity content.



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EXPANDING OUR MISSION AND SUBSEQUENT ACTIVITIES

In recent years, there was growing concern within the committee that there were other underrepresented groups in the department that couldn't be adequately represented or advocated for under the umbrella of "women in physics". Not all minority members of the physics department identify as women, and self-identified women are also diverse along other axes (*e.g.*, race and ethnicity, sexual orientation, etc.). Thus began a discussion of whether, and how, to broaden both the mandate and the demographic composition of the committee, while also taking care to not diminish the role that WiP plays as a community and a counterspace for women in the department. Concerns were wide-ranging: Would women in the department lose the leverage they had worked hard to establish? Would the camaraderie and respectful discourse within the committee diminish if its composition changed? Would we become overwhelmed by attempting too many difficult undertakings and become less effective, not really serving all or any marginalized groups? To tackle these wide-ranging concerns, we invited Shanice Yarde, one of the Equity Educators from the McGill Provost's Office to moderate and guide two extended conversations with our committee and most active volunteers. The moderator used her expertise to help us voice our concerns as well as our hopes and to explore various options for change and growth. We emerged from these discussions with a strong sense that our advocacy should encompass a wider intersection of issues and departmental concerns and that we should begin work to transition the committee

from focusing on women in physics to advocating for equity and inclusion in physics. In June of 2020, the EDI committee was formally created.

Climate survey — In an attempt to check the temperature of the entire department in an anonymous fashion, a group of students, postdoctoral researchers, staff, and faculty joined together to run a departmental climate survey for Summer 2020. The goal was to better understand how identity affects people's experiences in the department. The hope is that by running regular surveys in the upcoming years, we will be able to make informed programmatic decisions and be more accountable to the physics department community.

Best practices — Spurred by discussions within the department and at the WIP Conference at McGill, in 2019 a group of students set out to formulate Best Practices for the department to adopt. The goal of the document is to provide concrete recommendations for action and learning to be organized so that department members can access sections based on one's role in the department (*e.g.*, committee chair, individuals). In parallel to the development of the code of conduct and department values statement (see below) this best practices document is evolving and informing the prioritization of actions items for our community.

New departmental statement — Galvanized by the tragic death of George Floyd, the department was called upon by our students to take action. The EDI committee, with the full support

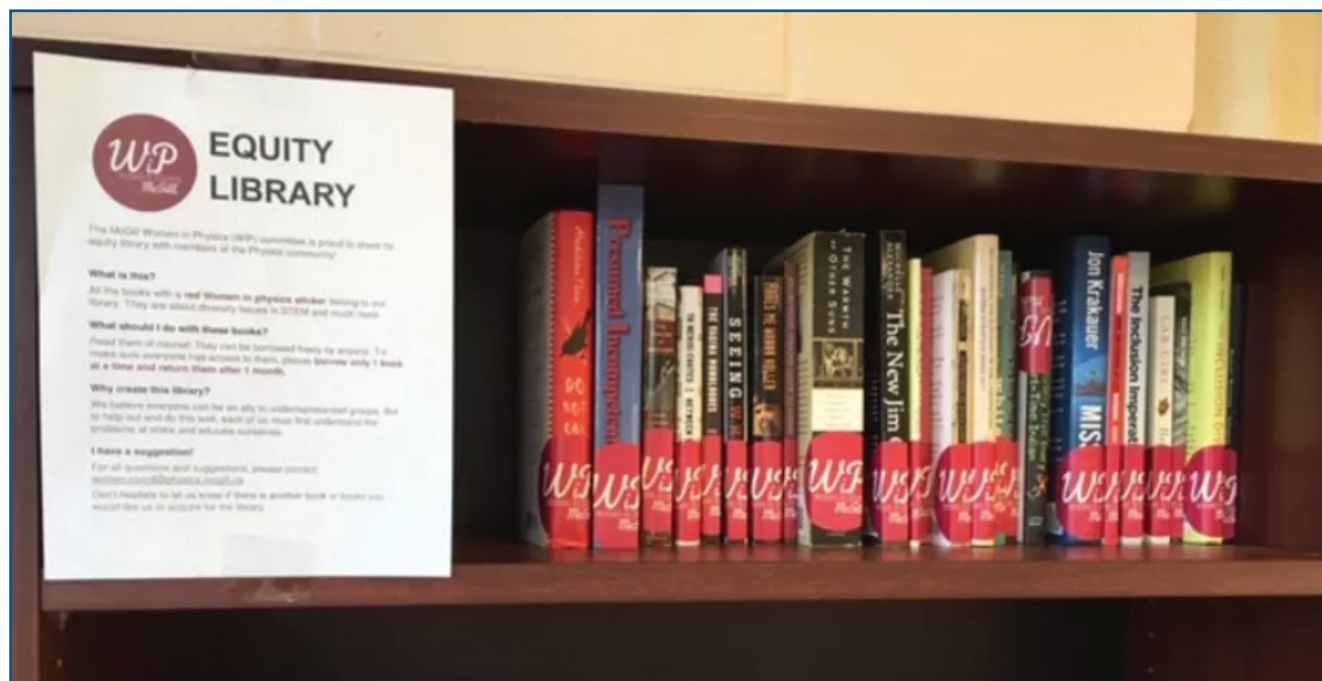


Fig. 1. Equity library in the physics staff lounge.

of the chair of the department, drafted and published McGill Physics Community Statement against Racism on June 9th 2020. On the next day, the department joined #ShutDownSTEM and #ShutDownAcademia to educate ourselves on the prevailing systemic racism in the physics community and to reflect on what needs to be done to make our department more diverse and inclusive. Town hall meetings, organized by a member of the EDI committee, were extremely well-attended with approximately 100 people in the audience across a wide cross-section of the department including students, postdoctoral fellows, and faculty members. Our discussions were framed around how our department stands with respect to the list of suggestions made by the TEAM-UP report from American Institute of Physics. After the meetings, the committee solicited suggestions from everyone on how to facilitate a sense of belonging, help build physics identity, and provide academic and personal support for under-represented minorities. We received overwhelming support with more than 5.5 letter pages worth of suggestions. One of the action items that we immediately tackled was drafting a permanent values statement and code of conduct for the department. With the help of over 30 volunteers of students, postdoctoral fellows, and

faculty members, first drafts were completed within a month and were shared with the rest of the department for open feedback. A revision is currently underway. In parallel, the same group of 30 volunteers are drafting a prioritized list of action items, identifying each of their goals, metric of success, required resource, and the responsible party in the department.

OUR EDI COMMITTEE GOING FORWARD

While our story ends here, our journey does not. We aim to provide resources and initiatives to the department and feel equipped to do so. However, it takes more than a committee to make a real change. Improving the work culture and climate requires the expertise, support and effort from every member of the department. We are encouraged and heartened by the outpouring support thus far from many of our colleagues, as well as their dedication to support each other and to promote the diversity of our future physics communities. It is our hope and vision that through continued EDI work that includes the voices and participation of all members of the department, we will together make our community a better place for everyone.