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Deanne van Rooyen

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PRESIDENTIAL ADDRESS

Looking Back to Move Forward: Why Scientific Societies Should Contribute to Making our Science an Equitable, Safe, and Inclusive Space

Deanne van Rooyen

*Department of Mathematics, Physics, and Geology
Cape Breton University, Sydney, Nova Scotia, B1P 6L2, Canada
* Current address: Department of Earth and Environmental Sciences
Acadia University, Wolfville, Nova Scotia, B4P 2R6, Canada
E-mail: deanne.vanrooyen@acadiau.ca*

The Geological Association of Canada is 75 years old this year! It has been a pleasure and a huge privilege to be involved with the leadership of this wonderful society over many years. In this Presidential address I would like to highlight some of the things that stand out to me as I conclude my time as president. I have been involved with GAC for many years. My first scientific conference presentations as a student happened at Canadian Tectonics Group (CTG) workshops, and then at GAC-MAC conferences. When I became a full-time faculty member at Cape Breton University, I took on positions as councilor for CTG and Chair of the Precambrian Division. In 2017 I was asked to be the Science Program Chair on GAC Council, and a few years later became Vice President and this month concluded my time as President.

We weathered some really big storms over our 75 year history, but the last few years have brought some of the biggest changes our association has ever seen, not just internally, but around the entire world. Since 2017 our organization has changed significantly. In 2017 we had three full-time time staff members, but since then Karen Johnston-Fowler and Eleanor Penney have both retired and Karen Dawe is now our one-and-only HQ person. She is our collective corporate memory and in multiple ways the reason we still function! Thank you, Karen, for your dedication! In 2017 and 2018 we were struggling with the financial fallout from two very challenging conferences that did not return as much revenue as expected and then a 2018 cyber attack at Memorial University resulted in the loss of our entire website, all our archived material and historical documentation, and all registration and membership systems. We don't always remember exactly how hard that period was, but we should. It was a nightmare, and the fallout continued for years. After a great recovery year in 2019 the pandemic

dealt a huge blow to our association, most visibly in our conferences of course, but also behind the scenes. Karen was unable to work in the MUN office for months at a time, and a lot of her work is hosted on MUN servers, which were not set up for remote operation. This was a significant hurdle to smooth operations during a difficult time. Solutions were cobbled together, improvised, and sorely tested, but our HQ including the bookstore stayed operational although there were delays in shipping. It is hard to ship books when one is not allowed in the building where the books are stored and even harder to produce physical documents for an audit when they are inaccessible because all the people involved are working remotely and none have office access.

We are still rebuilding from some of those setbacks but have made the most of the opportunity presented to modernize a number of things in the association. We now have a new governance structure (2-year terms for president and a combined vice-president/past-president position), and a new financial management system through a contract with the Pathfinder Group in Halifax. This arrangement has modernized our accounting practices, sorted out years of tax issues, shepherded us through two extremely difficult audits (pandemic auditing is officially the worst!), completely revamped the way we support sections and divisions with financial systems, and modernized and streamlined the way we deal with conference finances. I can confidently say that we are coming out of this period in much better financial and organizational shape than we've been in years. I am extremely proud of everything we've accomplished to ensure that our organization continues to be a vital part of the Canadian geoscience scene. I want to thank the councils and executives from the last few years for being engaged in this process and for supporting new initiatives even during uncertain times. Your work was vital and remains so!

In addition to the organizational aspects we also focused on creating new policies and codes of conduct for members specifically dealing with issues in equity, diversity, and inclusion (EDI). Many people have asked me why I decided to work on policies for GAC specifically dealing with EDI issues, and why we needed an updated Code of Ethics and a new Code of Conduct. My answer to that comes in part from my background, and in part from the general state of geosciences as a wide field.

I grew up in South Africa, at the height of the Apartheid era. My first memory of enforced segregation and the inherent injustice associated with it is of being told (as a 5-year old) that the annual music concert for our studio could not happen in

the local church or school hall, because Black children would take part. That was the moment when politics became real to me and it demonstrated how wrong that system was. When I entered elementary school we did not do fire drills, but instead had terrorism drills, and were all taught how to identify limpet mines and anti-personnel landmines. The most prominent poster in our Grade 1 classroom was not the alphabet, but information on limpet mines. I attended a convent school for high school, which was a deliberate choice, because at the time only independent religious schools allowed students from all races to attend together. My first year of high school was the year Nelson Mandela was released from prison, and that was also the first year ever that my friends and I could ALL get onto the same city bus and go somewhere together – before 1990 there were separate buses for each racial group. All through my education there I was fortunate to have mentors, teachers, and friends who never shied away from speaking about the ugly truth of apartheid. I had friends whose parents were killed by the army, knew teachers who lost public school jobs for daring to pick anti-apartheid books for classes, and classmates who could only live in certain “designated areas” because of their race. But there is a happy ending, because a few years later Nelson Mandela was inaugurated as the first democratically elected president of South Africa. I was present as one of a group of musicians who played at the state reception for this momentous occasion.

After high school I went into professional classical music, which was a field where discrimination in hiring is still rampant (Nayeri 2019). Even though the first women to join a professional orchestra were hired in 1913 (Queen’s Hall London), until the 1970s there were still vanishingly few women in professional orchestras. The solution for many orchestras lay in establishing a blind audition process, in which the judges were put behind a screen so that they could not see the person playing their instrument. The process even included having a carpeted walkway for the performer so that the distinctive sound of shoes or high-heeled footwear could not be heard. In North America, where this process was instituted widely, the percentage of women hired by professional orchestras increased from only 6% in 1970 to 21% in 1993 (Goldin and Rouse 2000) and has since continued to climb. In case we are tempted to think that gender discrimination is a thing of the past, look at some of the top orchestras in Europe – the Berlin Philharmonic did not allow women to be hired until 1982, and the Vienna Philharmonic continued to discriminate until 1997. The Vienna Philharmonic case is particularly egregious because they had a harpist, Anna Lelkes, who had played with them for 26 years, but was never allowed to be in the official roster, official photographs or even the program listings, and she was paid a fraction of the male musicians’ salary. And just in case we are tempted to think it was only a gender discrimination problem – the Vienna Philharmonic did not allow musicians of Asian descent to be hired until 2003 (Osborne and Conant 2003), allegedly because their “sound” was different from the western European “sound”. In the same way, women were said to have a different “sound” and to be “disruptive” to the cohesion of the group. It sounds ridiculous to us today, but

this is not the distant past. In a personal note, I did not see a female conductor until university but my daughter (who just joined an orchestra this year) will forever remember that her first two conductors were female and will never imagine that gender could be a problem – so representation matters!

Suffice it to say that I have seen the ideologies of white supremacy and exclusion up close and will keep doing everything in my power to fight them for the rest of my life. Even in Canada where we like to imagine we are immune from some of the more unsavoury aspects of politics we are seeing a worrying increase in hate crimes, and language and rhetoric that promote exclusion and polarization is more common. Nobody wins in an environment like that. So why is it important to develop appropriate policies for a geological organization that is supposedly light-years removed from political ideology? The answer is simple: the absence of overt active discrimination is not good enough. Earth Science as a broad field is still one of the least diverse fields in science, and depressingly little progress has been made in that area over the last 40 years (Bernard and Cooperdock 2018; Dowe et al. 2021 and multiple references therein). Earth Science is often seen as a “macho” field, and the overwhelming view of our discipline is that it is unwelcoming to people who do not fit the popular stereotype of a geologist. We need to take active steps to make sure our field is not exclusionary and unwelcoming, and policy is one step in a long process of improvement.

Many people have asked me why we need to do this, and they usually say something like “*I’ve never seen any real discrimination or harassment at conferences*” or “*I would never do that kind of thing, and all my peers are like me and would never engage in that kind of behaviour*”.

Allow me to demonstrate with an example. Think of people in our (or any other association) as the dots in Figure 1A. There are three kinds. The first group is the original group which is fairly homogeneous in terms of origin, gender, field of study, sexual orientation, or any other characteristic you want to explore. Most of our members are similar in that they are either positively inclined with respect to improving diversity within our science, or they are neutral, not because they do not care, but because it is not something they have thought about much. I would say that the bulk of our members fall into this category, and because we are a fairly homogenous group in general this represents our default member profile. These are the black dots in Figure 1A. However, there is a smaller subgroup that is actively hostile to newcomers of a different category (again, this works for any category or characteristic), and each of those negatively inclined members have a certain sphere of influence where they interact with people. These are represented by the orange dots within wider spheres. Finally, we have the newcomer group, representing different genders, sexual orientations, races, or cultures. The chances are pretty good that each newcomer is likely to encounter a negative interaction with one of our prejudiced individuals at some point. They will then come away from such interactions thinking that ours is an unwelcoming field, in which people discriminate, and that it is not a profession that they want to be a part of. These negative interactions may be next to invisible to most

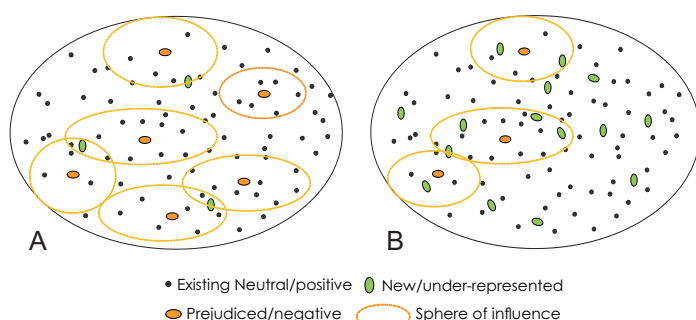


Figure 1. A) A hypothetical scientific society at Time A. B) A hypothetical scientific society at a later Time B. See text for discussion and explanation.

other members with more balanced views, but the actions of prejudiced individuals can sour the entire association, and silence and complicity from the majority does nothing to help.

A second illustration, Figure 1B, represents a situation in which there is some progress. There are fewer prejudiced individuals, and also many more newcomers. Many of the newcomers in this scenario will not experience negative interactions, and will therefore come away with a good experience, but not all will be so fortunate. I think we are at least partially in this stage, i.e. we do not exclude people explicitly, but many practices and attitudes remain fundamentally unwelcoming to people from groups underrepresented in our field. Dr. Vernon Morris wrote eloquently about this in a 2021 AGU article (Morris 2021), I urge everyone to read this very personal essay along with other articles in the same issue and reflect on what it means for our science when so many people feel profoundly excluded and unsafe in our academic and professional spaces.

This second stage shown in Figure 1B brings its own challenges. Now we hear a lot of people say, quite legitimately in their experience, that they have never seen active discrimination or harassment, and many of the newcomers can also report that they feel comfortable in the association. There is thus little incentive to keep working on eliminating a problem that most do not see, but it is important to do so. We want to make our field and associations welcoming for everyone, not just for the lucky ones who manage to avoid negative interactions. For every lucky newcomer who has a great experience, others are still pushed out of the field by harassment and discrimination. We may never know exactly how many, but we know we can do better. We want to make sure that *every* newcomer feels included, and we want to make sure that we clearly state and live by our values. This means acknowledging that problems still remain, it means believing the reports of harassment and discrimination that are shared with us, and it means understanding that “not actively doing harm” or being neutral is really not enough to reverse historical exclusion and the discrimination that has characterized science and academia for so long. If you have any doubt that this is still a problem, start with the critically important study by Clancy et al. (2014), and read some of the recent reports from multiple fields and institutions, including the award-winning documentary “*Picture a Scientist?*” (Cheney and Shattuck 2020), which in my view should be required viewing for anyone in a leadership position in any

academic or professional capacity. Or read the recently published study by Mattheis et al. (2022) reporting current data on experiences in geoscience. This is not an issue of the “past” or something that will go away when “problematic” individuals retire. This is the present, this is the lived experience of countless people in our professional spaces.

In that spirit, with the goal to make our shared values explicit, visible, and actionable, the GAC now has three new guiding documents. These are a *Position Statement on Equity, Diversity, and Inclusion*, a revised *Code of Ethics for Members* and a new *Code of Conduct for members* at all GAC events including conferences and other activities. The first phase of implementation of these policies resulted in the creation of a new position of Safety Officer on Local Organizing Committees. This position makes our commitment to both physical and psychological safety a visible priority. This LOC position has been a great success and we’ve received lots of positive feedback from organizers or events, and from participants who could see that we have a firm institutional commitment to upholding our new codes of conduct and ethics.

Policies like these are just one step in creating a more welcoming environment in our organization. Policies make our values and priorities explicit and show what we think is important. Policies also provide a check on members who may be hostile to change or inclusion of people different from themselves or the dominant group. Individual actions can improve culture on some scales, but structural support is needed for more comprehensive changes, and individual actions alone cannot be expected to effect change if policies are not implemented. Nevertheless, we know that individual and collective actions can drive policy development to make organizational culture and values visible, and they are the first step towards changing norms and expectations for interactions throughout the association. Our policies should reflect not only who we are, but who we aspire to be.

It is also worth looking at ourselves closely when we consider our awards and honours. We have only had two female Logan medalists in our history. We have only had two female Hutchison medalists in our history. All four of these awards were given since 2017. I will not for one minute believe that before 2017 we had no female geologists who were worthy of those awards. Our record of awardees from other under-represented groups is equally dismal. Some will point out that this imbalance reflects historical exclusion in our field more than today’s attitudes, but we cannot just wait for historical injustices to quietly dissipate. If that was the way it worked we would have recognized many more of the brilliant women who have been active in Canadian geology over the last 6 or 7 decades by now instead of only two. If you are not convinced that we have a problem, have a look at the listing of major awards from major geoscience societies in terms of gender equity (Table 1) always keeping in mind that these numbers represent the under-represented group that has made the *most* progress in representation, and that numbers for every other group is much, much worse.

We have to make a point of actively looking for areas where we can address these injustices and improve the diversi-

Table 1. Summary of medalists for major awards: UK, USA, and Canada ONLY for gender.

Award	Number of women awardees over lifetime of award
Murchison Medal – Geological Society (UK)	4 women since 1873*
Wollaston Medal – Geological Society (UK)	4 women since 1831
Lyell Medal – Geological Society (UK)	8 women since 1876
Bigsby Medal – Mid-career award – Geological Society (UK)	7 women since 1877
President's Award – Early career – Geological Society (UK)	13 women since 1980
Penrose Medal – Highest award, Geological Society of America	2 women since 1927
Arthur L. Day Medal – Geological Society of America	3 women since 1948
Donath Medal – Early career award, Geological Society of America	9 women since 1989
Logan Medal – Highest award, Geological Association of Canada	2 women since 1964
Hutchison Medal – Early/Mid-Career, Geological Association of Canada	2 women since 1974
Howard Street Robinson Medal – Precambrian or Metallogeny	6 women since 1985+

*1919 and 1920, 2019, 2020, 100 years between awardees... This makes me really respect the 1919/20 committees!

+ Other GAC section/division awards have similar distributions. The only place where the percentage of women is slightly higher is in student thesis awards, e.g. VIP or CTG student thesis prizes, but even in these categories that is a recent trend, not the norm.

NOTE: The numbers for visible minorities and People of Colour are even more dismal – the awardees are overwhelmingly of European descent, and that certainly does not reflect even the small amount of existing diversity in the field of Earth Sciences.

ty of award winners in all areas. This approach is needed throughout our work. I'm happy to say that several of our Sections and Divisions have now taken steps to make their awards procedures more equitable. For example, CTG has removed "time taken to complete degree" from their criteria in judging their MSc and PhD thesis competitions. Why does this measure help to level the playing field? It does so because the previous criteria actively excluded anyone with a break in their degree program, whether it be due to health issues, parental leave, having to work to pay the rent, or even something as prosaic as equipment failure. Furthermore, it recognizes that not everyone has a linear path through their career, and that taking a detour or accommodating life's other responsibilities does not make one any less of a scientist. Similarly, the Precambrian Division's Student Travel Grants program that sponsors students to attend GAC annual meetings no longer requires academic transcripts as part of the application but asks only for a conference abstract and an application letter. Why does this matter? It matters because students are now judged only on the work and plans they are submitting for the conference. Why should a student who had poorer grades in their second year (perhaps because they were working at nights, or transferred from some other program, or encoun-

tered other problems in their studies) be penalized when they are presenting thesis research? Keeping the criteria limited to the things that are actually important for the competition makes it less likely that the committee will be sidetracked by unconscious bias.

This work really starts with awareness of issues, education, research, and then development of policy to change behavior. In a perfect world the changes would come from everyone as education and awareness become more prominent, but in the messy world in which we live we have to start with the policies and then wait for the hearts and minds of some members to follow. Scientists are excellent at making observations and interpretations, but this sometimes leads us into complacency because we only find what we are looking for. We have to remember that just because we do not see or experience something personally does not mean it does not exist. We also have to remember that if we ignore all the things we claim not to see we may miss really important issues and challenges, as well as opportunities and successes. In the end, we must we ask ourselves: if we do not look closely at our scientific societies and academic and government institutions, who will?

So what do I want us to do? I want the silent majority of our members to really look hard at areas where you can make

geoscience and our association a more welcoming field. I want you to look at your colleagues and help them see where they may be intentionally or unintentionally putting up barriers to access or engaging in inappropriate conduct. I want to use people's stated pronouns whether you understand them or not. I want you to actively assist and mentor geoscientists from under-represented groups. I want you to find and champion stellar geoscientists from under-represented groups for awards, for grants, and for leadership positions – support them so that they feel welcome and valued in all our professional spaces. In short, I want you to support them as wonderfully well as you have done with me, and I want everyone to experience the same GAC that I know and love. Do not be the silent majority, be the loud, proud, welcoming majority!

It has been an honour to lead the GAC for a few years and thank you for your trust in me and in our councils and thank you for your continued dedication to our science and association. Here's to 75 more years of great science and wonderful connections!

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