

IAH-CNC President's Report

August 2020

Let me begin by saying that I hope you and your family members are healthy. There is no doubt that these have been, and are continuing to be, very trying times.

Over the past year the IAH-CNC has been active on several fronts. Some highlights include:

IAH-CNC Conferences and Events: The IAH-CNC partnered with the Geological Association of Canada – Mineralogical Association of Canada (GAC-MAC) to host GAC-MAC-IAH 2019, which was held in Quebec City in May 2019. Our Annual General Meeting was held in conjunction with this conference. GAC-MAC-IAH 2019 in Quebec City was excellent. In total, there were 11 IAH-CNC sessions, and 106 IAH-CNC presentations or posters. The Early Career Hydrogeologists Network also hosted a social event, and Richard (Dick) Jackson from Geofirma Engineering Ltd. gave an excellent talk during our luncheon. We thank our Quebec colleagues, Dr. Christine Rivard (Natural Resources Canada), Dr. René Lefebvre (INRS), and Dr. John Molson (U Laval), for their involvement in organizing GAC-MAC-IAH and representing IAH on the organizing committee.

GeoConvention2020 has been on a rollercoaster ride since March. When the Alberta Health Officer mandated no public gatherings in the spring, GeoConvention and the partnering organizations (including IAH-CNC) opted to delay holding the conference until late summer. However, those plans changed, and it was decided to hold a virtual conference in September (Sept 21-23, 2020). Many scientific conferences have moved to this format, while others have postponed meetings for up to one year. We collectively decided to move ahead with a virtual conference given all the time and effort that went into its organization, particularly by Cathy Ryan (U of Calgary) who has been serving as our representative on the local organizing committee, but also the session organizers and presenters themselves. As a joint conference with various other geoscience organizations, this virtual conference will be a great opportunity to find out about the latest research and practical applications in a wide range of geoscience disciplines (hydrogeology, geophysics, geology, mineralogy) all from the safety of your (home) office.

The fall-out of going virtual for GeoConvention from the perspective of our normal activities (luncheon, awards ceremony, Early Career Hydrogeologists networking event) is that these will be delayed until next year. On the positive side, we have secured the Darcy Lecturer, Reid Maxwell, who will be giving the Darcy Lecture on the Monday of the conference. Our Annual General Meeting will be held over the lunch hour on the Tuesday (Sept 22 – 12:30 pm Mountain time).

Next fall (September 26-29, 2021), the IAH-CNC will be partnering with the Canadian Geotechnical Society (CGS) to host a conference in Niagara Falls. Jim Roy and Magdalena Krol are serving on the local organizing committee. Over the coming year, you can expect to receive email notifications pertaining to conference events and deadlines. Of particular note, this will be quite the party for us, given that we will have three Farvolden Award (2019, 2020 and 2021) and two Early Career Hydrogeologist (2020, 2021) awards presented at that conference. John Cherry, winner of the Stockholm Water Prize for 2020 will be giving a keynote address at this conference.

Our plan for subsequent annual conferences are somewhat uncertain, but the current plan is that we will partner with GAC-MAC in 2022 in Halifax, and then possibly CGS in 2023 in Saskatoon, followed by CGS in 2024 in Montreal.

In addition to these major events, the Regional Representatives have organized a variety of local events, which are described in the various Regional Director's Reports. A huge thank you to these Regional Reps.

Treasurer: At the Annual General Meeting held in May 2019, Jim Roy, from Environment and Climate Change Canada, was elected as a Director to serve as Treasurer of the IAH-CNC.

Elections Next Year: Next year we will be holding an election for Directors of the IAH-CNC during our Annual General Meeting in 2021. Having served two 3-year terms, I will not seek re-election. It is time to hand over the reins. There may also be other vacancies on the Board. Serving on the Board of Directors is a privilege not a burden, so if you have an Interest in any position, please contact me.

Director for Northern Canada: The IAH-CNC sponsored a very successful "Workshop on Hydrogeology in Yukon" in February 2020, which was attended by 60 participants. The high level of interest in hydrogeology in Northern Canada prompted discussion by the Board of having a Director for Northern Canada. This idea will be discussed at our Annual General Meeting in September 2020. If we decide to move forward with establishing a Director for Northern Canada, we will need to amend our bylaws and have these amendments reviewed by our lawyers. Then, at next year's AGM we would vote to change the bylaws and then elect a Director (along with all the other Directors).

Membership: As of July 27, 2020, we had 333 members. Our membership numbers have been relatively stable over the past several years.

Website Development Complete: I am happy to report that after quite some time, we now have a new and secure webpage and membership portal. This major facelift did cost us quite a bit, but we had the funds available for this one-time expense. As you know, we are a not-for-profit organization, so it was important to use a portion of our profit for improving services for our members. The webpage has front page for news and events, so if you have any hydrogeology related news or events that you would like to share, please send Barret the details. Also, if your company has any job postings, we do have a spot for those too.

Webinar Series: For your entertainment pleasure, we launched our Webinar Series "Making the Invisible Visible". We got off to a good start last fall, but it was difficult to line up speakers, and then things got derailed with this COVID thing. The Board brainstormed how to maintain regular webinars and arrived at two ideas. First, we are going to invite past Farvolden Award winners to do a webinar. Jim Hendry, who was the 2019 recipient of the award, has already agreed to do a webinar in the coming months. We also have an idea of a coffee house style webinar, intended mostly for graduate students. Our idea is to have the students from one university present more as a group, each taking a turn to showcase what they are working on. Anyway, we will experiment with these ideas over the coming year. Our website (under Resources) provides links to those webinars that were recorded. If you missed Tom Gleeson's webinar last fall, you can access it here <https://www.iahcnc.ca/webinars.php>. If you think you might enjoy doing a webinar, please contact Éric Rosa (Québec Rep) who is organizing these webinars. Note: these webinars can cover any topic; a research study, a nifty field site; a new technique; or even some cool hydrogeology from a trip that you did before we were not allowed to travel.

Board of Directors Meetings: The Board of Directors has continued to meet regularly throughout the past year. We held teleconferences (and one Zoom meeting) in September, November, January, April, May, June and July.

Awards and Scholarships: The 2020 Robert N. Farvolden recipient is Dave Rudolph from the University of Waterloo. This award is made jointly by the IAH-CNC and the CGS and honours outstanding contributions to the disciplines of Earth science and engineering that emphasize the role or importance of groundwater. The 2020 Early Career Hydrogeologist Award recipient is Jana Levison from the University of Guelph. This IAH-CNC award recognizes a young professional for their contributions to hydrogeology. Both award winners will receive their awards at next year's annual conference.

For 2019, the IAH-CNC awarded two \$5,000 scholarships for Graduate Studies in Hydrogeology (no awards were made in 2018). The scholarships were awarded to Kelly Hokanson (University of Alberta) and Stephanie Wright (Queen's University).

The Tóth Award for the Best Student Paper in Canadian Hydrogeology was awarded to Rob Wu, a PhD student in the Department of Earth and Planetary Sciences at McGill University (supervisor, Dr. Jeff McKenzie). His presentation was titled "Hydrogeological monitoring of infiltration through waste rock using active fibre optic distributed temperature sensing". The runner up for the Tóth Award for 2019 was Vinicius Ferreira Boico, Université Laval (supervisor, Dr. René Therrien) for his presentation "3D fully-integrated modeling of subsurface drainage flow in a Danish agricultural area".

The Early Career Hydrogeologists Network: A new team of volunteers is leading the IAH-ECHN Canada. Raymond Craddock, President, is a MSc candidate at Dalhousie University; Vinicius Ferreira Boico, Vice-president, is a PhD candidate at Laval University; and Cecile Coulon, Communications, is a PhD candidate at Laval University. Thank you all for volunteering to serve the IAH-ECHN.

International News: The IAH planned to hold its 47th International Congress in Sao Paulo, Brazil in 2020, but this conference has been postponed. Instead the IAH will have two congresses in 2021, in Sao Paulo and in Brussels. Brazil and Belgium are coordinating efforts to put forward a unique IAH experience to create an opportunity for many more people to participate.

Diana Allen, President, IAH-CNC

International Association of Hydrogeologists – Canadian National Chapter (IAH-CNC)

Atlantic Region Director's Report September 2020

Gavin Kennedy, Atlantic Region Director

Alongside the communications director, Dr. Barret Kurylyk, and the president of the Early Career Hydrogeologists Network – Canada, Ray Craddock, the Atlantic region has been well represented within the IAH-CNC over the past year.

As Atlantic Director, I participated in various conference calls throughout the year, attended the IAH-CNC AGM during the 2019 GAC-MAC-IAH conference in Quebec City, prepared semi-annual news updates from the region for publication in the IAH-CNC News Bulletin, and helped organize various groundwater related talks. We are also busy planning the next GAC-MAC-IAH conference which will be hosted in Halifax, Nova Scotia in 2022.

A few highlights of the past year's IAH-CNC Atlantic region's activities included the organization of engaging talks at Dalhousie University's Centre for Water Resources by Fred Baechler in October of 2019 and Diana Loomer in January of 2020. Unfortunately, we are not planning in-person talks anytime soon due to the pandemic but are hopeful that by organizing some online talks we can increase the breadth of engagement with the IAH-CNC throughout the Atlantic region.

Atlantic IAH members or groundwater practitioners are encouraged to submit newsworthy items or ideas for future talks or events by contacting me.

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Québec Director's Report September 2020

Éric Rosa, Québec Director

As elsewhere in Canada and around the world, 2020 was marked by the challenges imposed by the COVID-19 pandemic. However, the fall of 2020 marks a gradual return of teaching and research activities on university campuses, which must adapt to new constraints. Moreover, the scientific and professional community in Quebec has continued its efforts to maintain activities related to groundwater and environmental protection. Among the topics of broad interest, we note the new provincial legal requirements with respect to the studies required concerning groundwater catchments intended for the supply of drinking water and the proposed regulatory changes concerning wastewater treatment, two questions of great importance for any hydrogeologist working in the field of groundwater protection. Among the news that caught our attention, we should also note the tabling of the report of the *Sustainable Development Commissioner of Quebec* in June 2020, which includes a chapter dealing with the issue of the *Conservation of water resources*. Among the upcoming events, the *Geological Society of America* conference, which will be held virtually from October 26 to 30, represents an opportunity for knowledge sharing and networking.

Comme ailleurs au Canada et dans le monde, l'année 2020 aura été marquée par les défis imposés par la pandémie de COVID-19. L'automne 2020 marque néanmoins un retour graduel des activités d'enseignement et de recherche au sein des campus universitaires devant s'adapter à de nouvelles contraintes. D'ailleurs, la communauté scientifique et professionnelle du Québec a poursuivi ses efforts en vue de maintenir des activités en lien avec l'eau souterraine et la protection de l'environnement. Parmi les dossiers d'intérêt, on note les nouvelles exigences légales provinciales relatives aux études requises concernant les captages d'eau souterraine destinés à l'approvisionnement en eau potable et la proposition de modifications réglementaires concernant le traitement des eaux usées, deux questions de grande importance pour tout hydrogéologue œuvrant dans le domaine de la protection des eaux souterraines. Parmi les nouvelles qui retiennent l'attention, notons aussi le dépôt du rapport du *Commissaire au Développement durable du Québec* en juin 2020, lequel comporte un chapitre traitant de la question de la *Conservation des ressources en eau*. Parmi les événements à venir, la conférence de la *Geological Society of America* qui se tiendra virtuellement du 26 au 30 octobre prochain représente une opportunité de partage de connaissances et de réseautage.

2019-2020 IAH-CNC Ontario Annual Summary Report

The annual report has been prepared for the period of May 1, 2019 to September 18, 2020 for IAH-CNC Ontario.

Ontario Regional Events

Regional-Scale Groundwater Geoscience in Southern Ontario

The Ontario Geological Survey (OGS), Geological Survey of Canada (GSC) and Conservation Authority Geoscientists Group presented the 5th annual two-day open house 'Regional-Scale Groundwater Geoscience in Southern Ontario' on February 19 and 20, 2020 in Waterloo, Ontario. This annual event took place at the Federation Hall of the University of Waterloo.

The key objective of this open house was to keep the groundwater community apprised of new mapping, research, publications and results of collaborative OGS and GSC groundwater mapping and on geoscience activities of the respective Federal, Provincial, Academic and Conservation Authority agencies and collaborators.

This year, the fifth-year initiative included oral presentations, a panel discussion, and a two-day poster session and was very well-attended with more than 250 practitioners, engineers, geoscientists, government partners, and collaborators from all across Ontario.

IAH-CNC was a sponsor for the 5th annual groundwater Open House, providing \$1000 of funding towards the event from the IAH-CNC Ontario region budget.

Eastern Ontario Geoscience Workshop

The second annual Eastern Ontario Geoscience Open House was scheduled for April 8th, 2020 in Ottawa, hosted by the City of Ottawa and the Eastern Ontario Conservation Authorities and sponsored by the International Association of Hydrogeologists - Canadian National Chapter and the Professional Geoscientists of Ontario. We had an amazing line-up of guest speakers with the focus on new geoscience guidelines and regulations relevant to issues within Eastern Ontario. Unfortunately, due to the Covid-19 pandemic the event was postponed and has not yet been rescheduled. We hope to reschedule this Open House information/networking event in 2021.

Although the COVID-19 Pandemic limits our face-to-face technical evening seminar gatherings in Ontario as well as across the globe, we look forward to another exciting and informative year in 2020-2021!

Prepared by:

Nataliya Tkach and Tessa Di Iorio,

IAH-CNC Ontario Directors

International Association of Hydrogeologists – Canadian National Chapter (IAH-CNC)

Manitoba Director's Report September 2020

Jeff Bell, Manitoba Director

Things in the world these days have made things even more challenging in Manitoba with the IAH-CNC. We have always struggled with having very few members in this province working in the field of hydrogeology. With a smaller civil service, and a number of retirements, IAH only activities have been fairly limited. We have had some success in partnering with the local CGS, although even these activities have been curtailed this year.

Our most promising change in the last few years is an increase in activities with the University of Manitoba. There are a large number of students now undertaking graduate work with the Engineering Faculty there. We expect to see a slow steady increase in the IAH in Manitoba as a result.

It was an “interesting” summer while developing a new normal at the University of Manitoba. As with many other places, developing new ways of doing things has been the normal. These have been the problems that have been faced by the graduate students in Groundwater Engineering and Hydrogeology. Despite all the changes, things managed to stay very busy. Private practice is also continuing to be very busy, with all recent graduates hired on by the local governmental and consulting offices.

There are currently several major projects in Manitoba that have a large hydrogeology component. Recently, there has been a great deal of interest in the Winnipeg Formation sandstone deposit for mining purposes. Although the methodology is unknown, it appears that borehole mining will be the likely tool for the proposed mining method. As this is a major bedrock aquifer that provides water supply to a large portion of the area, there are a lot of questions left to be answered. In addition, there is a big push in Manitoba to look at climate adaptation and mitigation of climate impacts. Questions are coming in from all geoscientific areas including agriculture, environmental problems, hydro power generation, geothermal energy, and geotechnical engineering - a really interesting time for geoscientific work and research.

Our close collaboration with CGS in Manitoba allowed us to start the Manitoba CGS Student chapter on the initiative of Dr. Pooneh Maghoul and we are more than happy that a lot of undergraduate students joined the graduate students to hear seminars on projects on geotechnical and groundwater engineering. Currently, we are also working on a virtual seminar to be delivered for the CGS/IAH-CNC luncheon session – most likely without the luncheon...

International Association of Hydrogeologists – Canadian National Chapter (IAH-CNC)

Alberta Director's Report September 2020

Frank Magdich, AB Director

During 2020, due to restrictions related to Covid-19 a few scheduled conferences that may have been of potential interest to Alberta ground water professionals were postponed and/or modified into “virtual” events.

GeoConvention 2020 was to be held in Calgary in May but was rescheduled as Virtual GeoConvention 2020 for September 21-23. IAH-CNC is a partner in this event which includes the IAH-CNC Annual General Meeting. Please reference the event website www.geoconvention.com for details.

The CGS annual conference, GeoCalagry 2020, scheduled for September was also modified into a virtual event GeoVirtual 2020, Sept 14-16. It ended up being a successful virtual event with over 500 registrants; and included Hydrogeological content in the technical sessions. For details please check out the weblink www.geovirtual2020.ca

ESSA's annual remediation conference REMTECH 2020 is still scheduled for Oct. 14-16, but is now virtual. Details can be found at www.esaa.org/remtech

If you have been an IAH-CNC member and have not yet renewed membership this year then please consider doing so. Your support is appreciated and needed. www.iahcnc.ca/benefits.php

If Alberta IAH members or groundwater practitioners have ideas for organizing IAH or general groundwater related events (once things get back to normal) then please feel free to contact me to discuss further (frank@oakenviro.com).

International Association of Hydrogeologists – Canadian National Chapter (IAH-CNC)

British Columbia Director's Report September 2020

Laurie Welch, BC Director

The primary local BC event is the annual Hydrogeology Symposium held at the University of British Columbia in Vancouver. The Symposium provides BC member and non-member hydrogeologist with educational and networking opportunities. The full day event was held in Fall 2016, Spring 2017, Fall 2018, and most recently in the Fall of 2019. The 2019 event included presentations from volunteer speakers on hydrogeological topics of relevance to British Columbia, with social breaks and a casual lunch, followed by an Early Career Hydrogeologist Network social event. Highlights included presentations on topics of stream depletion, Provincial Ministry regulatory updates, artesian well control, and case studies. IAH-CNC Membership is encouraged by the event, as IAH-CNC members and students attend free of charge and there is a small fee for non-members. The event is well attended by academics, students, consultants, government hydrogeologists, and research organizations from across the province.

The IAH-CNC BC member distribution list is being updated as memberships are renewed. The BC Director will continue to encourage membership renewal through Email reminders. Member engagement is ongoing with email notification of upcoming events of interest such as conferences, events, webinars, and job postings.

IAH-CNC News Bulletin information is provided semi-annually by the Director. News items include information and updates from BC researchers, relevant BC regulatory changes, government groundwater science programs and initiatives, and upcoming events of interest.

For 2020-21, webinar options will be considered for local events, and the BC Director will continue to communicate with BC members regarding webinars of interest organized by IAH-CNC or by others.

An update from the ECHN Executive Committee

Hello ECHN members!

Earlier this summer, a new executive committee was selected with Raymond Craddock as the president, Vinicius Ferreira Boico as the vice president, and Cecile Coulon as the communications officer. The team is excited to serve the ECHN community and to introduce some new content to members. Namely, the ECHN Discovery Webinar Series will be introduced in October. Each webinar will be hosted by a different groundwater lab across the country giving students the opportunity to present and discuss their research with other members of the hydrogeology community. All members are welcomed and encouraged to attend. Unfortunately, due to the global pandemic, the annual and networking events have been cancelled, so the ECHN intends to make up for this with virtual opportunities such as these webinars.

Stay safe and we hope to see you soon on Zoom!

International Association of Hydrogeologists – Canadian National Chapter (IAH-CNC)

Communication Director’s Report September 2020

Barret Kurylyk, Communications Director

Despite the distancing imposed by COVID-19, we have tried to keep the IAH-CNC community together. IAH-CNC communications activities since our May 2019 AGM are highlighted below.

Bulletins:

Bulletins were issued in June 2019, December 2019, and June 2020. As is typical, these bulletins included updates from the President and provincial branches as well as information on upcoming conferences, recent conference activities, award recipients from within the Canadian groundwater community, international IAH activities, and membership updates. Thank you to MAsc student Nicole LeRoux (Dalhousie) for her help with these and for all Board members who contributed.

Website:

The new website (<https://www.iahcnc.ca/>) was launched in 2019. Some aspects of this website can be modified by me (e.g., the events page), while others modifications involve Gibson Group. I want to thank the many Board members who thoughtfully provided feedback on the website. It will always be a work in progress, and we are happy to receive further input from others. Please alert me if there is outdated or erroneous information on any page.

Webinars:

A new IAH-CNC webinar series “Making the Invisible Visible” was launched since our last AGM, and three webinars have been held.

1. Dr. Tom Gleeson (University of Victoria), “Global groundwater systems, resources and sustainability and new tools for protecting local environmental flows from pumping”, November 26, 2019
2. Dr. Rachel Lauer (University of Calgary), “Soap holes: an enigmatic and problematic feature of the Canadian Prairie”, February 11, 2020
3. Dr. Aaron Mohammed (Dalhousie University), ECHN webinar, “Preferential flow and snowmelt partitioning in frozen soils”, February 24, 2020

I appreciate Dr. Éric Rosa’s (UQAT) tireless efforts for making these webinars a reality. We intend to offer more webinars over the coming months. If you have webinar ideas, please let us know.

Social media:

Our number of Twitter account followers (135) has doubled (<https://twitter.com/iahcnc>) since our last AGM, but we could still do much better. If you have interesting ideas on what to feature on Twitter, please let me know. I would like to highlight our early-career member publications far more, and it would be easier if those members would alert me via email when their publications come out (barret.kurylyk@dal.ca).

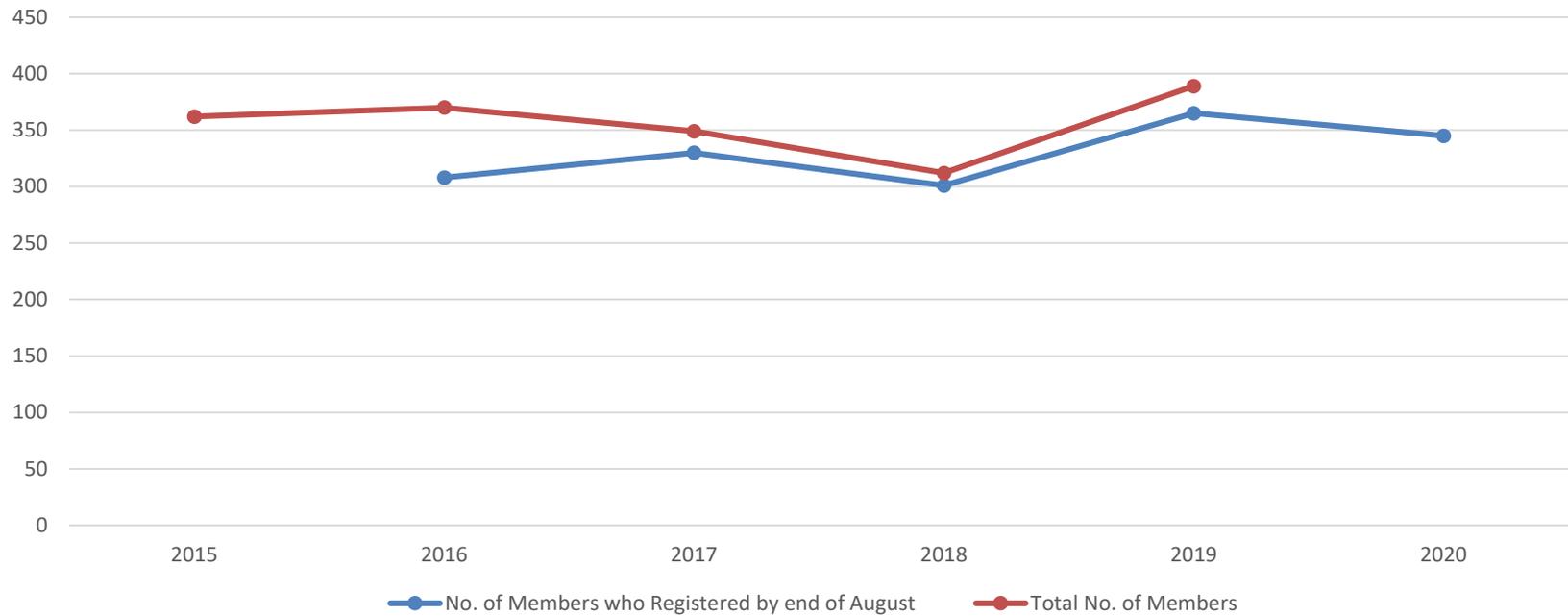
International Association of Hydrogeologists Canadian National Chapter (IAH-CNC)

2020 Membership Update

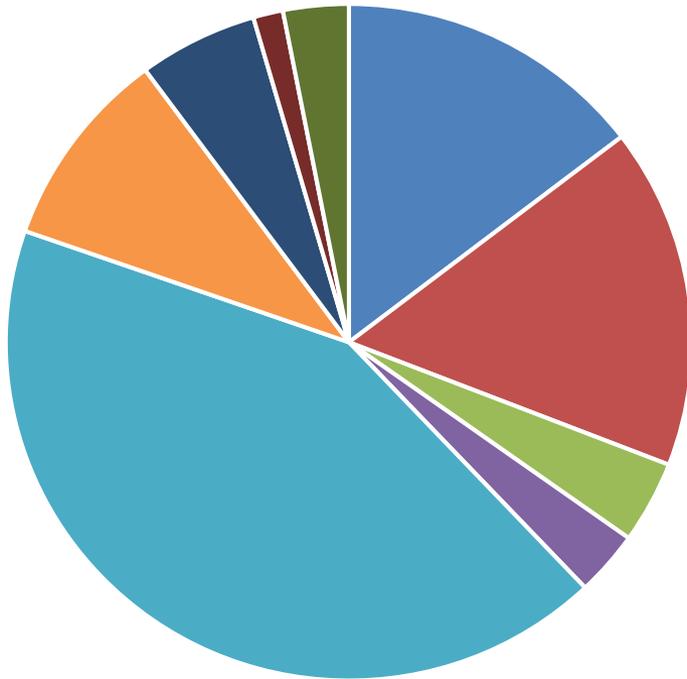
1. *Membership Overview*
**Current as of September 16, 2020*
2. *Membership Breakdown*
***Current as of September 16, 2020*



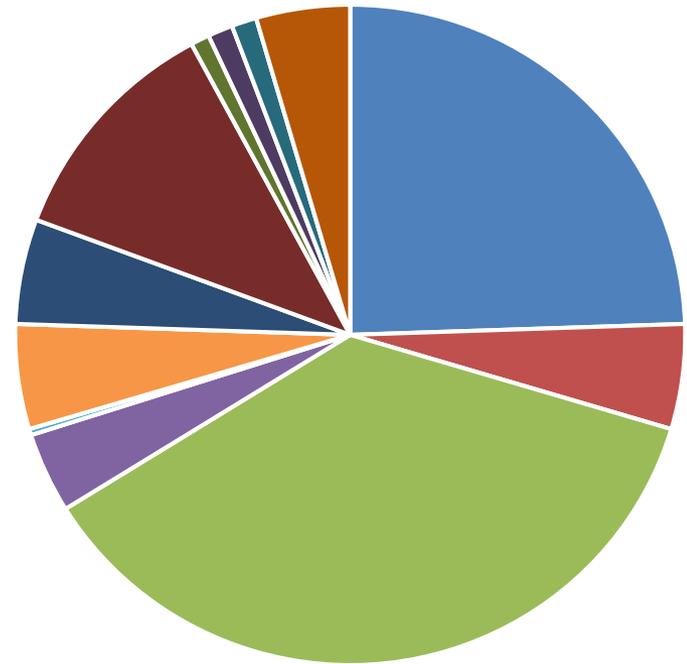
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International Association of Hydrogeologists Canadian National Chapter (IAH-CNC)



■ BC ■ AB ■ SK ■ MB ■ ON ■ QC ■ Atlantic ■ Territories ■ NC Sponsor Members



■ Full Member ■ Full Member (2nd Society) ■ Online Member
 ■ Retired Member ■ Honourary Member ■ Full Student Member
 ■ Online Student Member ■ Associate Student Member ■ HJ Editor
 ■ Corporate Sponsor ■ Corporate Member ■ Corporate Staff Member

International Association of Hydrogeologists Canadian National Chapter (IAH-CNC)

About IAH-CNC (www.iah.ca)

- About 350 professionals across the country
- Largest groundwater-focused organization in Canada
- Receptive to hydrogeologists, scientists, engineers, and others interested in groundwater resources



Why Join?

- Flexible membership options (Full, Student, Corporate) with full member benefits, including free online or print access to *Hydrogeology Journal*
- Free membership as an Associate Student, with limited benefits
- Networking opportunities, including the Early Career Hydrogeologists Network