



# Mineralogical Association of Canada

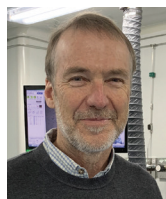
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## MAC 2020 AWARDS

The Mineralogical Association of Canada (MAC) is pleased to announce its award winners for 2020.

### Peacock Medal to Dr. Simon Jackson

The Peacock Medal is the highest award bestowed by the Mineralogical Association of Canada and recognizes the long-term research efforts and contributions of an individual to the Earth sciences within the Canadian context. This medal is awarded to a scientist who has made outstanding contributions to the mineral sciences in Canada.



This year's awardee is **Dr. Simon E. Jackson**, a crustal lithogeochemist and research scientist with the Geological Survey of Canada (Ottawa) who works in the survey's Analytical Chemistry section.

Dr. Jackson's nomination was presented by a team of high-calibre research scientists, which speaks volumes of the high regard they hold him in. His nomination reads as follows:

*Citation:* Simon Jackson is a scientific pioneer who has been at the forefront of mineralogical and geochemical research for his entire career, beginning with his seminal work on the development of laser ablation inductively coupled plasma mass spectrometry (LA-ICP-MS) in the early 1990s. Simon has led many of the major developments in LA-ICP-MS techniques that have revolutionized the quantitative micro-analysis of minerals. This includes the development of new laser ablation systems, the first robust software for data processing (LAMTRACE), methods for quantitative calibration and uncertainty of LA-ICP-MS datasets, high-spatial resolution trace-element mapping, and the development of geological reference materials through international collaboration. These advances have helped transform the trace-element analysis of minerals at the micron scale, within a spatial context, and have led to significant new applications in diverse fields, including mineralogy, metallurgy, geochronology, environmental geochemistry, archaeology and ore system science. His impact on these diverse research fields has often gone beyond analytical method development and analysis, making him a sought-after collaborator across government and academic research.

Many of Simon's earliest papers now represent seminal contributions in the field. For example, the calibration strategies for converting LA-ICP-MS signals to fully quantitative element concentrations developed by Simon and colleagues have endured rigorous scientific testing over the last several decades and remain the method of choice for fully quantitative micro-analysis. His 1992 paper in *The Canadian Mineralogist* (v30, pp1049–1064) describing some of these innovative procedures was immediately recognized as ground-breaking: it justifiably received the 1993 Hawley Medal. Simon has also made important contributions to the development of micro-analytical standards – which form the foundation of all applied in situ analytical studies – and his research has been integral in the development of LA-ICP-MS analysis of zircon for U–Pb geochronology. His 2004 paper in *Chemical Geology* (v211, pp47–69) has garnered over 3,000 citations and was one of the first to document and compare the precision and accuracy of LA-ICP-MS measurements for U–Pb ages of various zircon reference materials – a task of interest by numerous research teams today.

Simon is also a mentor for many young students and early career researchers through his positions in academia and government. To those that know him, these personal connections have had a lasting impact on their careers by instilling a sense of scientific experimentation and rigor. It is this combination of research quality and magnanimous personality that have contributed to Simon's recognition as a leader across the Canadian and international research community, the sum of which makes him the pre-eminent choice for the 2020 Peacock Medal.

### Hawley Medal Winners

The Hawley Medal is awarded to the best paper published in *The Canadian Mineralogist*. In 2019, this award went to **Dr. Elliot A. Wehrle** and **Andrew M. McDonald** (Harquail School of Earth Sciences, Laurentian University) for the following paper:

"Cathodoluminescence and Trace-Element Chemistry of Quartz from Sudbury Offset Dikes: Observations, Interpretations and Genetic Implications" *The Canadian Mineralogist*, 2019, v57(6), pp947–963 (<https://doi.org/10.3749/canmin.1900049>).

This contribution combines cathodoluminescence (CL) data and trace-element chemistry in quartz (including a novel application of the Ti-in-quartz geothermometer) to elucidate the conditions of formation relating to offset dikes in the Sudbury area. These dykes also serve as important exploration targets for Ni–Cu–platinum group element (PGE) sulfide mineralization at Sudbury. Although the contemporaneous timing of both the offset dikes and the main mass of the Sudbury Intrusive Complex is supported by their similarities in trace-element geochemistry, individual dikes possess unique characteristics that suggest differences in their respective parageneses. A combination of qualitative CL images and electron probe micro-analysis trace-element data suggests that the CL response of quartz may potentially be used not only as a tool for recognizing textures that are not apparent or resolvable by other techniques but also as an indirect proxy for Ti concentration in quartz. The authors have demonstrated that the combination of CL imaging and Ti analysis of quartz has the potential to serve as a robust indicator of not just the conditions of formation and subsequent crystallization processes that impacted the Sudbury offset dikes but also of the broader formational processes that operated in the Sudbury Basin.



**Elliot A. Wehrle** is a graduate student of the University of Windsor (Canada), supervised by Dr. Iain Samson. His current MSc project focuses on Archean gold mineralization in the Wawa Gold Corridor (Ontario, Canada). Elliot completed his BSc at Laurentian University (Canada) under the supervision of Prof. Andrew M. McDonald, who supervised both his NSERC Undergraduate Student Research Award (USRA) (during which the research for this project was undertaken) and his undergraduate thesis. Mr. Wehrle graduated at the top of his class (grade point average of 9.67, Dean's Honour Roll for four years) and has already received numerous accolades: the NSERC USRA (in the second year of his program); the David Beilitz Award for the best undergraduate thesis presentation; a Society of Economic Geologists (SEG) Undergraduate Scholarship; a Student Industry Economic Workshop (S-IMEW) award; an SEG field trip attendee (Gold Deposits in the Birimian of Ghana, West Africa); a Geological Association of Canada–Mineralogical Association of Canada (GAC–MAC) Earth Sciences Award; and an Ontario Graduate and an SEG scholarship in 2019. Mr. Wehrle has balanced his academic achievements with practical experience, including summer work terms with Canadian Malarctic (Kirkland Lake, Ontario) and Red Pine Exploration (at Wawa). As an undergraduate, Mr. Wehrle also penned a paper on gahnite and its exploration implications, based on research stemming from his undergraduate thesis. He has presented two papers at a national conference (at the "Resources for Future Generations" conference in Vancouver, in June 2018), both of which received very high accolades and significant attention. Mr. Wehrle is an outstanding young scientist with a keen interest in using mineralogy to elucidate processes involved in the formation and evolution of ore deposits.



**Andrew M. McDonald** is an applied mineralogist in the Department of Earth Sciences at Laurentian University (Canada). His background is firmly planted in the crystal chemistry of minerals and the geological processes they reveal, applying these to solve geologically relevant problems, specifically problems on the high field-strength elements (Ti, Zr, Nb) and platinum-group and sulfide (magmatic ore deposit) mineralogy. He obtained a BSc (Hons.) from the University of Toronto (1987) and graduate degrees from Carleton University (MSc in 1989; PhD in 1992). He joined the faculty at Laurentian in 1992 and currently holds the rank of full professor; he is also the Director of the Microanalytical Centre there. He volunteers his time with the International Centre for Diffraction Data, is the Canadian member of the IMA Commission on Ore Mineralogy (COM), was a former associate editor of the *American Mineralogist* (2010–2013), served as the Vice-Chair of COM (2010–2013), along serving on the former IMA Commission on the Classification of Minerals (1996–2002). Within the MAC framework, he has served as secretary (2000–2006), president of the society (2016–2018) and past-president (2018–). He has also served two terms as an associate editor of *The Canadian Mineralogist* (2006–2009; 2020–), was a guest editor for the special issue entitled “The Mineralogy and Beneficiation of PGM–Cu–Ni Ores” (v49, pt6), was a member of the Hawley Medal Committee (2012), organized with Prof. Jim Nicolls (University of Calgary) a highly successful workshop entitled the Berry Summer School on Optical Mineralogy, and was vice-chair for the Sudbury 1999 GAC–MAC meeting. This is his third Hawley Medal: he and his team had been previously been awarded in both 2015 and 2018.

### Young Scientist Award to Prof. Chris Yakymchuk

The MAC Young Scientist Award recognizes research excellence by a young scientist under the age of 40 who has made a significant international research contribution and a very promising start to a scientific career.



The 2020 Young Scientist Award, which includes a medal, goes to **Prof. Chris Yakymchuk**, a dynamic, young researcher in Department of Earth and Environmental Science at the University of Waterloo (Canada) whose research interests broadly lie in understanding the tectonic history of mountain belts.

**Citation:** Chris Yakymchuk is an extraordinary young researcher. He is a true all-around geologist with a broad range of expertise in petrology and tectonics. He has become an internationally recognized leader in the area of accessory mineral petrochronology. Through his novel thermodynamic modelling, his research has provided (a) innovative predictive models to link metamorphic ages derived from accessory minerals to specific parts of  $P$ – $T$  paths in high-temperature metamorphic settings; (b) the first quantitative framework in which to interpret trace-element concentrations in accessory mineral chronometers, including Th/U ratios of metamorphic zircon in aluminous rocks, which is a commonly used but poorly understood ratio for differentiating between igneous and metamorphic zircons. His interdisciplinary approach to tectonics research – combining theoretical, experimental, analytical and field-based studies – positions him as a future leader in this area. More recently, he has applied his knowledge in petrology, phase mineral geochronology and tectonics to mineral deposit studies.

Prof. Yakymchuk received his BSc from Dalhousie University (2008), his MSc from Queen's University (2010) and his PhD from the University of Maryland (2014). He has traveled extensively to carry out his research (conducting research on every continent) and maintains an active, field-based research program. He was recognized by the Geological Society of London as Young Author (2014) and won the 2020 Jane Lang Excellence in Earth and Environmental Sciences

Teaching award. Prof. Yakymchuk is a prolific and high-impact researcher. He has contributed to 36 papers and currently has an additional eight submitted for review. His papers have been well-cited: one of his papers from 2014 received over a hundred citations, and three of his papers on accessory minerals have each had over 50 citations (Google Scholar). He has a h-index of 14. These are remarkable achievements for an early career scientist just five years after finishing his PhD.

Prof. Yakymchuk's research is diverse, but includes several themes espoused by the MAC: the behaviour of open systems that have undergone high-grade metamorphism, fluids in the deep crust and the U–Pb geochronology of accessory minerals, all being firmly rooted in sound field studies. The MAC is incredibly proud to be able to recognize Prof. Yakymchuk's research excellence and to support him as his career develops.

## MAC AWARDS – CALL FOR NOMINATIONS

### Peacock Medal

The Peacock Medal is awarded to a scientist who has made outstanding contributions to the mineralogical sciences in Canada. There is no restriction regarding nationality or residency. The medal recognizes the breadth and universality of the awardee's contributions to mineralogy, applied mineralogy, petrology, crystallography, geochemistry, or the study of mineral deposits.

### Young Scientist Award

The Young Scientist Award is given to a scientist who has made a significant international research contribution during the early part of their scientific career. The scientist will have received his/her PhD not more than 15 years before the award. He or she must be a Canadian working anywhere in the world or be a scientist of any nationality working in Canada. The research areas include mineralogy, crystallography, petrology, geochemistry, mineral deposits or related fields of study.

### Leonard G. Berry Medal

The Leonard G. Berry Medal is awarded annually for distinguished service to the association. The award recognizes significant service to the MAC in one or more areas that may include leadership or long-term service in an elected or appointed office or as important contribution(s) that has enhanced the mineral sciences in Canada or that has broadened the Canadian mineralogical perspective. The medal is named after Leonard G. Berry (1914–1982), a founding member of MAC, editor for 25 years of *The Canadian Mineralogist* and its predecessor journal, and the first winner of MAC's Past-Presidents' (now Peacock) Medal.

Nominations for the 2021 medals and award are to be submitted to Andrew M. McDonald (Harquail School of Earth Sciences, Laurentian University, Sudbury, ON P3E 2C6, Canada); E-mail: amcdonald@laurentian.ca.

Please submit your nominations by **31 December 2020**. Check our website, [www.mineralogicalassociation.ca](http://www.mineralogicalassociation.ca), for additional details.



### GAC - MAC London 2021 Joint Annual Meeting

May 17 – 19, 2021

*Exploring Geosciences Through Time & Space*  
*Explorer les géosciences à travers le temps et l'espace*

**Plan now to take part in GAC–MAC London 2021!** The Call for Abstracts is now open; the submission deadline is 18 January 2021. Get more info or submit your abstract at <https://gacmac2021.ca>.

**The University of Western Ontario in London, Ontario (Canada)**