



SEG Canada Foundation

## SOCIETY OF ECONOMIC GEOLOGISTS CANADA FOUNDATION FONDATION DE LA SOCIÉTÉ DES GÉOLOGUES ÉCONOMIQUES DU CANADA

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# 2018 Annual Report

(All amounts in \$CDN unless otherwise stated)

The SEG Canada Foundation (“SEGCF” or the “Canada Foundation”) was established in 1999 to facilitate charitable contributions by Canadian exploration and mining companies and members of the Society of Economic Geologists (“SEG”) in support of innovative research and education in economic geology. The Canada Foundation is modelled on the SEG Foundation, which, since it was founded in 1966, has provided roughly US\$6.5 million in support of SEG’s worldwide programs for student research, field trips, SEG Student Chapters and other educational activities.

The Canada Foundation’s objective is to support a broad range of activities that will enhance the qualifications of Canadian geoscientists, improve the quality of professional geoscience work and underpin research with respect to all aspects of economic geology. The core activity of the Canada Foundation is to provide financial support for fourth year undergraduate and graduate university students and SEG Student Chapter activities, including field trips, short courses, symposia and other innovative projects that support education and research in economic geology. Our goal is to help develop skilled economic geology and minerals exploration professionals.

Since its inception, SEGCF has raised over \$2.2 million. Of that amount, \$1,085,416 has been awarded to support undergraduate and graduate student thesis research in economic geology and \$176,000 has funded the Hugo Dummett historical *Economic Geology* DVD. The Canada Foundation has also supported the activities of SEG Student Chapters.

From 2014 to 2016 donations declined by 39% (2014: \$196,338; 2016: \$119,999) but have stabilized in 2017 and 2018. In 2018, donations were \$133,908 compared with \$133,861 in 2017. The Canada Foundation remains on a strong financial footing thanks to the strong support we have received from mining and exploration companies and individual SEG members. As a result, we have been able to successfully continue our high level of financial support for student programs.

This year, we distributed \$70,200 in Student Grants (2017 - \$69,546), \$40,000 in Student Fellowships (2017 - \$30,000) and 12 Undergraduate Senior Thesis Scholarships at \$1,000 each (2017 - \$12,000). The Canada Foundation continues to be financially strong, thanks to the generosity of our donors and the extraordinary efforts of our Fundraising Committee.

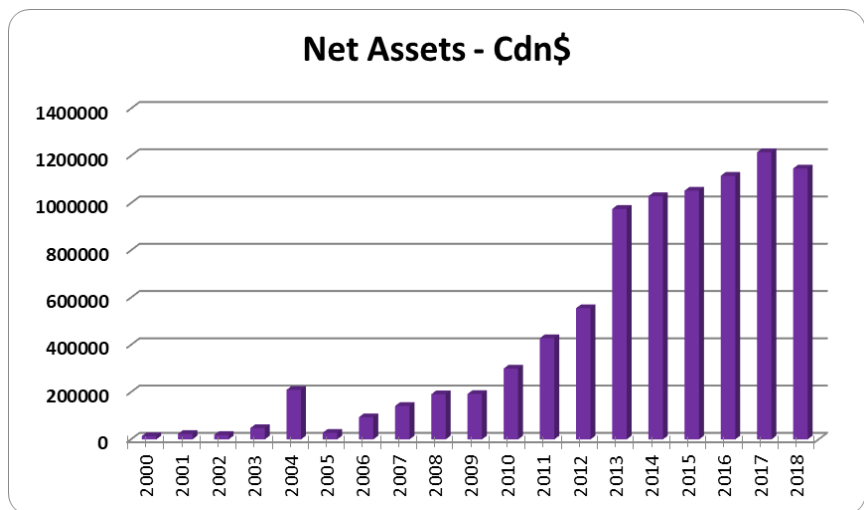
This is the second year that we have invested approximately 80% of our financial assets in a conservative portfolio of equities and bonds with Leith Wheeler Investment Counsel Ltd. (“Leith Wheeler”). Our return on this investment has averaged -6.3% in 2018.

Planning is well underway for the 2020 SEG Centenary meeting in Whistler (September 13-19, 2020). The conference is being co-hosted by SEG and the Canada Foundation and modelled after the successful Whistler 2013 meeting.

I would like to express my appreciation to our Board of Directors, who provided a strong level of support during the year. A vote of thanks goes out also to our many volunteers, including our Student Grant, Fellowship and Scholarship volunteer reviewers and our tireless Fundraising Committee led by Gerry Carlson. Thanks also to Kirstie Simpson, our Fundraising and Administrative Manager and to Max Sulimov, our accountant.

**Financial Results:** At December 31, 2018, the Canada Foundation’s unrestricted net assets stood at \$1,144,393 compared with \$1,212,911 a year earlier. Donations totaled \$133,908 (2017 - \$133,861), essentially the same as the previous year less expenses of \$140,156 (2017 - \$138,455). Awards paid of \$122,200 was an increase from 2017 (\$111,456). Excess of expenses over revenue was \$68,519, a decrease from excess of revenue over expenses of \$90,145 in 2017, due largely to an investment loss of \$62,826, a decrease from 2017 investment income of \$99,235.

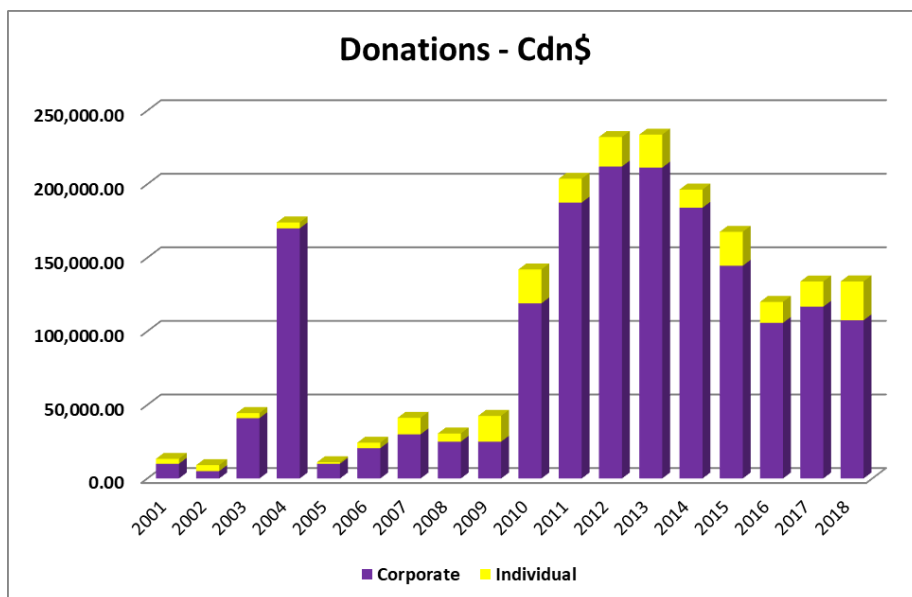
The Canada Foundation invests approximately 83% of its financial assets in a conservative portfolio of equities and bonds with Leith Wheeler Investment Counsel Ltd. (“Leith Wheeler”). The balance of the Canada Foundation’s cash is deposited in its chequing accounts and in GIC’s at minimal interest rates.



- The foundation’s long-term investment strategy with Leith Wheeler rests on the following principals:
- a) Investing in financial instruments that ensure the principal is adequately protected and not at undue risk from general market fluctuations;
  - b) Ensuring the rate of return on long-term investments is not less than the annual adjusted rate of inflation.

The total amount of the investment with Leith Wheeler at year end was \$950,076 with an annualized return of -6.3% (2017 - \$1,013,497, annualized return – 10.9%).

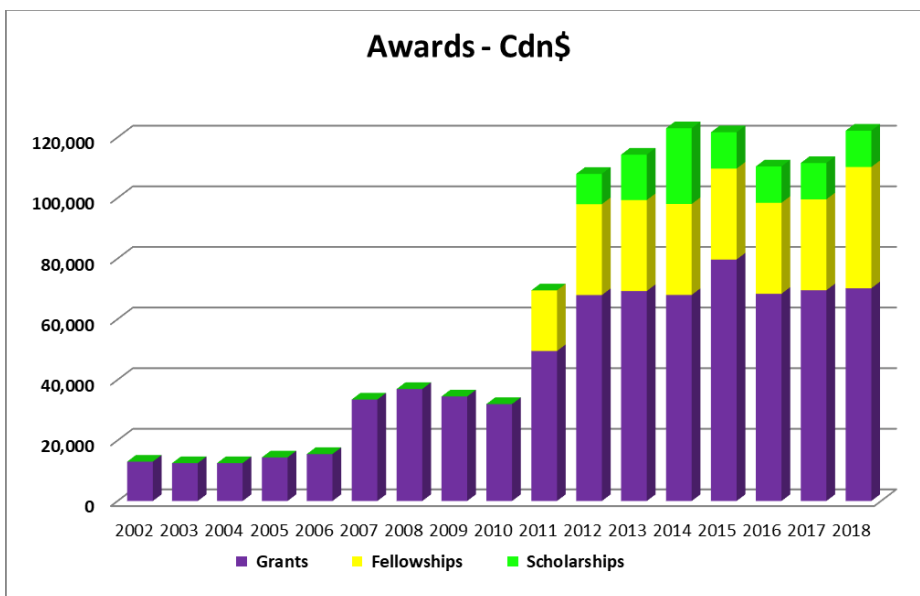
**Fundraising:** Gerry Carlson, Fundraising Coordinator, oversaw a successful fundraising campaign that involved some of our board members. This was another difficult year for commodities, yet we saw continued strength in donations totaling \$133,908 (2017: \$133,861). This effort was achieved despite the continued uncertainty in the commodities sector and the difficulties faced by mining and exploration companies, both large and small. Twenty-eight companies



contributed to the 2018 campaign, raising \$107,500 (2017: 24 companies - \$116,739). Personal donations were up from 2017, coming in at \$26,408 from 95 donors (2017 - \$16,862 – 104 donors). Corporate and individual donors are listed in Appendices I and II.

**Awards:** The SEGCF currently supports three separate awards (Appendix III): Student Research Grants, Graduate Student Fellowships and Undergraduate Scholarships. This year we surpassed \$1M dollars in distributed awards (\$1,085,416) since inception.

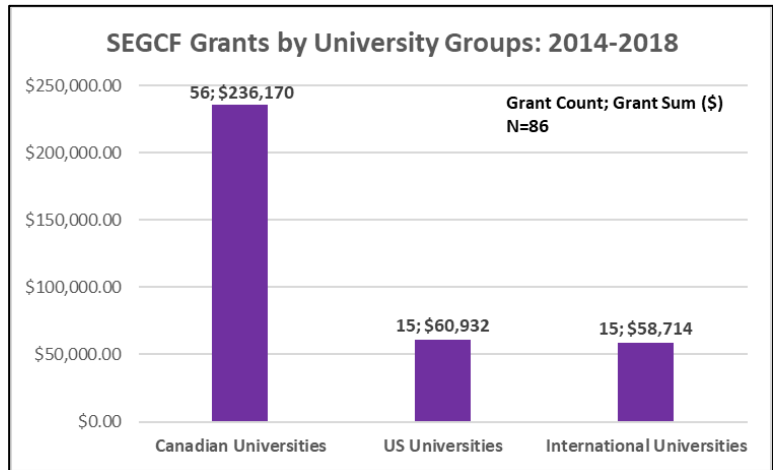
Student Research Grants are available to support graduate student thesis research leading to masters or doctoral degrees in Economic Geology and are typically directed towards field expenses or analytical work related to the thesis project. Canada Foundation’s Grant level in 2018 was \$70,200 (14 Grants), compared with \$69,546 (18 Grants) in 2017.



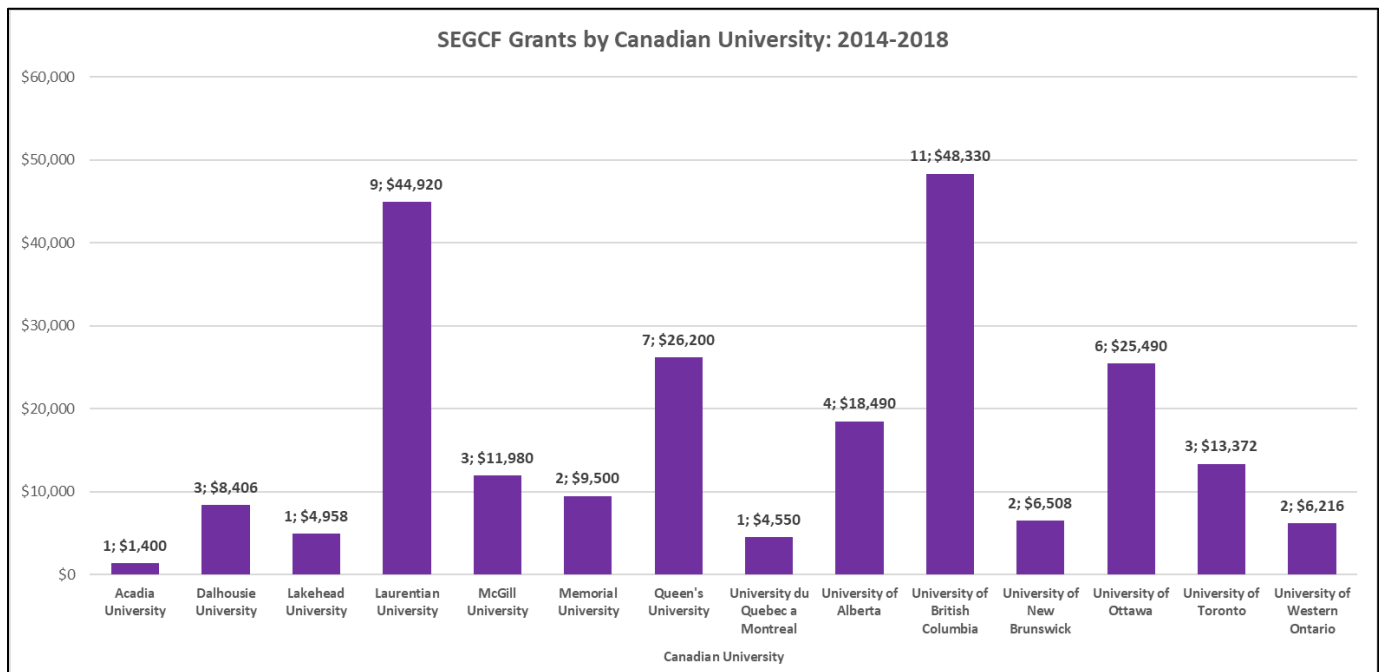
SEGCF Graduate Student Fellowships are available for a one-year term to students who intend to pursue a course of study in economic geology leading to a M.Sc. and/or Ph.D. degree in Economic Geology. Canada Foundation Fellowship awards increased to \$40,000 (6 Fellowships) in 2018, from \$30,000 (5 Fellowships) in 2017.

Our SEGCF Undergraduate Thesis Scholarship program, in its fourth year, supports field or laboratory work related to a senior thesis in Economic Geology at recognized Canadian universities. The program was again a success, with 12 scholarships awarded at \$1,000 each, the same as in 2017.

Over the past 5 years, 86 SEGCF grants have been awarded to students at Universities worldwide. Although overwhelmingly the students are studying at Canadian Universities (see bar graph) an estimated 67% of those students are non-Canadian. This year, all but two students are studying at a Canadian University (Appendix III) and 50% of the students are Canadian.



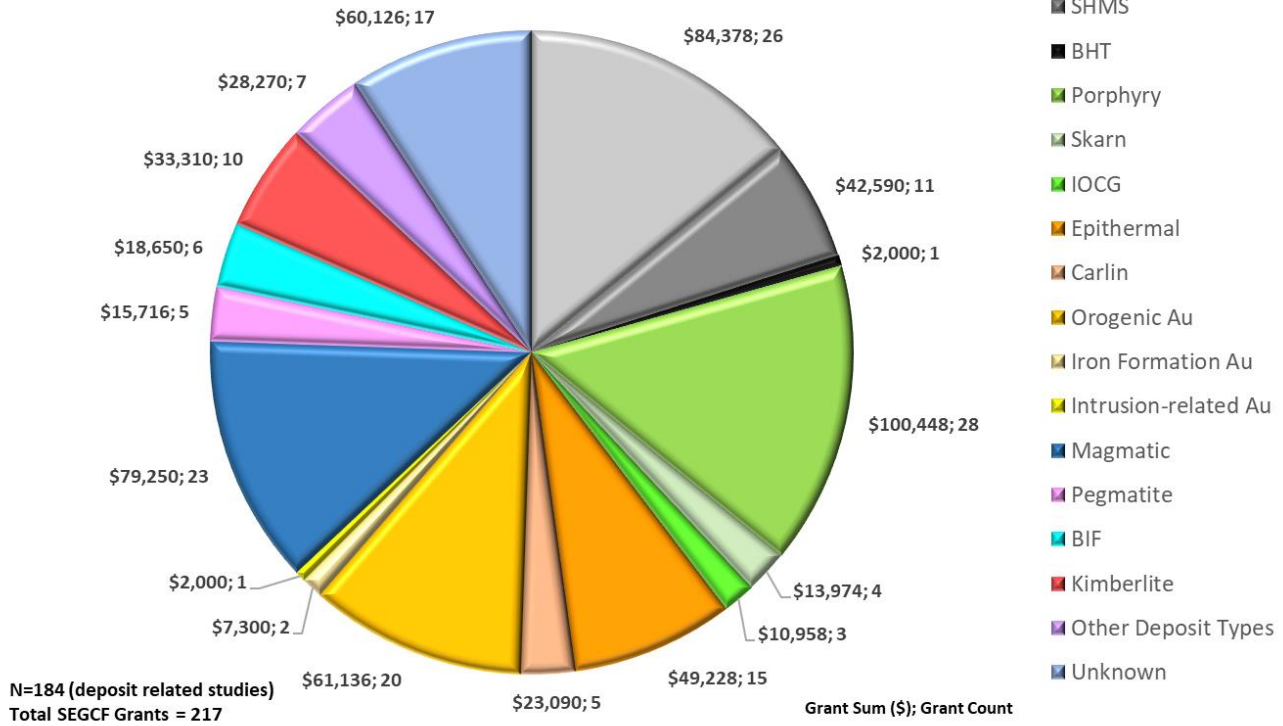
The SEG is making a concerted effort, through its Regional Vice Presidents and local members, to encourage greater participation by foreign students in the SEG Research Grants program.



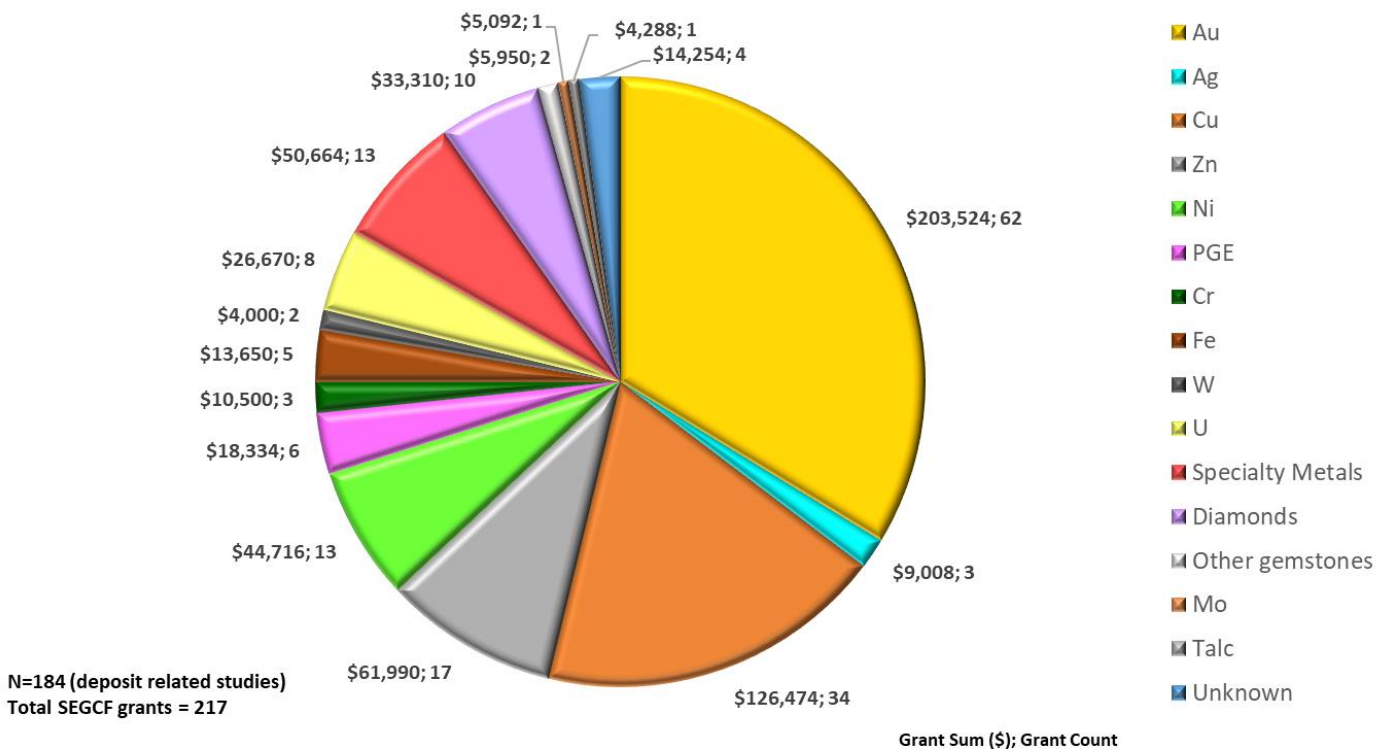
The bar chart above illustrates the number of SEGCF Grants and dollar amount by Canadian University for the past 5 years. Students from 14 different Canadian Universities have received SEGCF Grants during the period 2014 to 2018.

Since 2002, the Canada Foundation has awarded 217 SEG Grants (139 PhD projects, 77 MSc projects and 1 BSc project). Of these, 184 were for deposit-related studies and the balance were split amongst purely lab based, geochemical, structural, regional, environmental or other non-deposit specific studies. The following pie charts illustrate the diversity of the deposit-related studies by deposit type and primary commodity. The charts effectively demonstrate that the Canada Foundation grants have contributed to a broad range of mineral deposit research.

SEGCF Grants by Deposit Type



SEGCF Grants by Primary Commodity



A complete list of student Grants, Fellowships and Scholarships is included as Appendix III. The following Canadian SEG members participated in the review process for the Grants: 'Lyn Anglin, John Morganti, Ross Sherlock, Alan Galley and David Broughton; Fellowships: Patrick Mercier-Langevin and Marc Bardoux; and Undergraduate Scholarships: Fionnuala Devine, Ross Sherlock and John Morganti.

In closing, I would like to express my personal thanks to retiring directors Gerry Carlson and Bruce Gemmell. Gerry Carlson has led the SEG Canada Foundation since 2000, providing strong leadership, vision and unflagging effort to build the Foundation, both in the team of directors and committee members he assembled and the strong financial footing that the Foundation enjoys today. Gerry's tireless fundraising and promotion of the Society of Economic Geologists and SEG Canada Foundation will benefit generations of young geologists embarking on careers in economic geology. Bruce is the outgoing SEG President and his valuable contribution to our board during his one-year tenure is much appreciated.

Sincerely,

**Society of Economic Geologists Canada Foundation**



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Jason Weber, P.Geo., President

### **2018 SEG Canada Foundation Team:**

#### Board of Directors

Jason Weber, President  
Gerald G. Carlson, Past President  
Hugh Stewart, Treasurer  
Brian G. Hoal, Secretary  
Britt Bluemel  
Bruce Gemmell  
Garth Kirkham  
Ross Sherlock  
Lawrence Winter

#### Undergraduate Scholarship Committee

Fionnuala Devine  
Ross Sherlock  
John Morganti

#### Fundraising Committee

Gerald Carlson (Chair)  
Britt Bluemel  
Ross Sherlock  
Nawojka Wachowiak  
Jason Weber  
Lawrence Winter

#### Fundraising and Administrative Manager

Kirstie Simpson

#### Accounting

Max Sulimov, CPA

#### Lawyer

C. Michael Kray, LL.B.

#### Auditor

Manning Elliott LLP

# Appendix I

## SEGCF Corporate Donors – 2018

**SEG Canada Foundation**  
*Thank you!* **Corporate Sponsors**  
**2018**



**Patron Sponsors**

**Gold Sponsors**

**Silver Sponsors**

**Appendix II**  
**SEGCF Individual Donors – 2018**

Carolyn Anglin	Charles Jefferson	Howard Stockford
Luis Arauzo	Daniel Jiricka	Greg Stott
Marc Bardoux	Mark King	John Thompson
Steve Beyer	Sebastien Lavoie	Peter Thompson
David Blann	Francois Leclerc	Richard Tosdal
Denis Boisvert	David Lefebure	Ghislain Tourigny
Robert Bowell	Robert Linnen	Phillip Walford
Robert Boyd	Luisa Loayza	Ian Walton
James Brenan	James Logan	Robert Wares
David Broughton	Daniel Lui	Steven Williams
Alexander Brown	Allan Mactavish	Lawrence Winter
Roland Butler	Henry Marsden	Rimant Zalnieriunas
Gerald Carlson	Lindsay Mcclenaghan	Marcos Zentilli
Dominic Channer	Galen Mcnamara	Dawn Zhou
Guoxiang Chi	Terry Mersereau	
Michael Collins	Richard Moore	
David Copeland	Kevin Neyedley	
Michael Corey	Marco Nieto	
Olivier Cote-Mantha	David Pawliuk	
Jack Dann	William Pearson	
Alex Davidson	Serge Perreault	
Charles Dearn	Mark Petersen	
Michele Della Libera	K. Howard Poulsen	
Claude Dion	Kenneth Pride	
Asa Erlfeldt	C. Mark Rebagliati	
Anna Fonseca	Edward Reeve	
Antoine Fournier	Jeremy Richards	
Andrew French	K. Brock Riedell	
Simon Gagne	Francois Robert	
Alan Galley	Alfonso Rodriguez	
Benjamin Gelber	Madrid	
Philip Geusebroek	Pierre Sauve	
Ralph Gonzalez	Jon Scoates	
George Gorzynski	Steven Scott	
Kenneth Grace	Libby Sharman	
Mathieu Guay	Robert Sharp	
Mark Hannington	Johan Shearer	
Thomas Hart	Kirstie Simpson	
Scott Heffernan	Scott Smith	
Peter Hollings	Hugh Stewart	
Michel Jebrak	Peter Stewart	



### **Appendix III - SEGCF Student Awards - 2018**

<b>Graduate Student Grants - 2018</b>			
<b>Name</b>	<b>Award (C\$)</b>	<b>University</b>	<b>Subject</b>
Drew Barkoff	\$4,680	University of Nevada, Las Vegas	Behavior of critical metals in a highly evolved rhyolite magmatic and hydrothermal system
Christopher Beckett-Brown	\$5,460	Laurentian University	Tourmaline crystal chemistry as an indicator of porphyry-related mineralization
Michelle Campbell	\$5,980	Oregon State University	Ar-Ar geochronology of tourmaline in porphyry copper deposits
Lucille Daver	\$4,550	University of Quebec in Montreal (UQAM)	Mineralogical and noble gas isotopic analysis of fluid and solids inclusions in diamonds: study case of Renard mine diamonds, QC, Canada
Renelle Dubosq	\$3,900	University of Ottawa	Interrogating the atomic structure of microstructural base- and precious metal traps in pyrite: New approaches to 2D and 3D microstructural and geochemical imaging.
Dillon Johnstone	\$5,850	University of Regina	The lithological and structural evolution of the Patterson Lake corridor, SW Athabasca Basin, Saskatchewan, Canada: Host to a world-class uranium or system
Bryan Maciag	\$4,030	Dalhousie University	Experimental Study of the Effect of Contamination on Sperrylite Solubility
Matthew Manor	\$6,500	Memorial University of Newfoundland	Petrology and Nd-Hf isotope geochemistry of VMS-related felsic rocks and crustal growth of the northern Canadian Cordillera, Yukon
Dylan McKeivitt	\$4,680	Laurentian University	Geology and Geochemistry of Mafic-Ultramafic Sills in the Northern Permits, Raglan Ni-Cu-(PGE) District, Cape Smith Belt, Nunavik, Québec
Xuyang Meng	\$5,850	Laurentian University	Timing of the mineralization and overprinting of the metamorphosed Tongkuangyu copper deposit, North Zhongtiaooshan region, Trans-North China Block
Andrew Steiner	\$5,850	University of British Columbia	Mapping auriferous fluid pathways in the Nadaleen trend Carlin-type gold deposits, Yukon
Neal Sullivan	\$2,600	University of Toronto	The transport of PGE and Au in hydrothermal fluids: A new experimental approach designed in search for a unified PGE ore deposit model
Callum Walter	\$5,720	Queen's University	3D UAV Magnetometry for Improved Target Characterization in Mineral Exploration
Sandra Wind	\$4,550	University of Ottawa	Geodynamic Evolution of the Aegean Arc Rift and its Implication for Associated Precious and Base Metal Mineralization

### Graduate Student Fellowships - 2018

Name	Award (C\$)	University	Subject
Robert King	\$6,000	Memorial University of Newfoundland	Potential for further MVT mineralization up ice from Pine Point using indicator minerals
Zhi Guo Dong	\$5,000	University of Chinese Academy of Sciences, Beijing	Metallogenic environment and target optimization of manganese ore belt from west Kunlun, China
Ryan Shaw	\$10,000	University of British Columbia	Mineralogical Reaction modelling of partial extractions in geochemical samples
Jonathan Marleau	\$6,500	Universite du Quebec a Montreal	Metallogeny, stratigraphy and deformation of the South branch of the Eastmain Greenstone Belt, Quebec
Pearce Luck	\$7,500	University of British Columbia	Hydrocarbon geochemistry in non-petroleum based mineral exploration
Andrew Wickham	\$5,000	University of British Columbia	Surface till geochemistry and host litho-geochemistry of a concealed kimberlite

### Undergraduate Scholarships - 2018

Name	Amount (C\$)	University	Subject
Mary Besaw	\$1,000	St. Francis Xavier University	Geochemical characterization of K-feldspar from rare-element enriched granitic pegmatites
Gerald Broughton	\$1,000	Laurentian University	Coarse Siliciclastic Rocks of the Panda Sub-Basin
Rebecca Canam	\$1,000	University of British Columbia	Petrologic and geochemical characterization of a carbonate-bearing, amphibole-phyric intrusion at Hjalmar Lake, South Rae Craton, Northwest Territories: implications for mineralization potential
Hilary Chang	\$1,000	Memorial University of Newfoundland	Locating Earthquakes Using Waveform Characteristics in Source Scanning Method
Joachim de Fourestier	\$1,000	Carleton University	Application of nano-scale ATLAS imaging to purported volcanic products of the El Laco volcano, Chile
Joëlle Dufour	\$1,000	University of Ottawa	Barite mineralization within the Cyclades, Greece
Taylor Ledoux	\$1,000	University of British Columbia	Deportment of thallium in the non-sulphide bearing Taron epithermal Cesium deposit: Implications for economics, mining, metallurgy and the environment
Derek Leung	\$1,000	Laurentian University	Taking rocks for granite: An integrated mineralogical, textural, and petrographic baseline of curling stones used in international-level competition
Kanwar Multani	\$1,000	Dalhousie University	Experimental study of reaction textures in volcanoclastic kimberlites
Adrian Oberland	\$1,000	Laurentian University	Volcanic Stratigraphy and Alteration of the Sunrise Volcanogenic Massive Sulfide Deposit, Beaulieu River Volcanic Belt, Northwest Territories
Tabetha Sheppard	\$1,000	University of Ottawa	Ammonium Content and Minerals in Epithermal Silver Deposits
Marko Szmihelsky	\$1,000	University of Alberta	Paragenesis and fluid sources of the Pine Point Mississippi-Valley Type Pb-Zn District