



SEG Canada Foundation

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

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# 2017 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 \$2.1 million. Of that amount, \$963,216 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) due to the challenging financial environment for the minerals industry. In 2017, donation levels have stabilized at \$129,365. 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 \$69,546 in Student Grants (2016 - \$68,390), \$30,000 in Student Fellowships (2016 - \$30,000) and 12 Undergraduate Senior Thesis Scholarships at \$1,000 each (2016 - \$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.

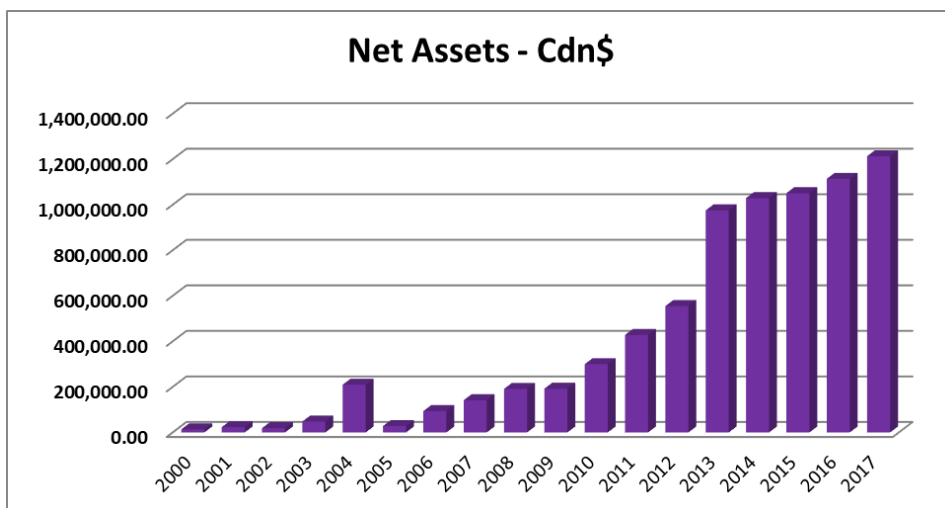
This is the second year that we have invested approximately 80% of our financial assets in a conservative portfolio of equities and bonds with Leith Wheeler Investment Counsel Ltd. (“Leith Wheeler”). Our return on this investment has averaged 10.9% in 2017.

In early 2017, SEG announced that Whistler would be the site of SEG’s Centenary meeting in September 2020, co-hosted by SEG and the Canada Foundation and modelled after the successful Whistler 2013 meeting. Meeting planning is underway with the formation of a Steering Committee. Contracts have been signed with the Whistler Conference Centre and with Sea to Sky Meeting Management.

In October 2017, Gerry Carlson participated in a strategic planning initiative at SEG’s Littleton, Colorado headquarters. The workshop, under the guidance of planning consultants Tecker International, brought together a diverse group of representatives from SEG, SEG Foundation and the Canada Foundation. One of the key objectives, as a new strategic plan for SEG is implemented, will be to better coordinate the activities of the three groups, particularly in fundraising.

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. Thanks also to Kirstie Simpson, our Fundraising and Administrative Manager and to Max Sulimov, our accountant.

**Financial Results:** At December 31, 2017, the Canada Foundation’s unrestricted net assets stood at \$1,212,911, compared with \$1,122,766 a year earlier. The increase resulted from donations of \$129,365 (2016 - \$119,999), an increase of 8%, and interest and investment income of \$99,235, a decrease from 2016 (\$119,455) less expenses of \$138,455 (2016 - \$167,496). The decrease in expenses was due mainly to a one-time expenditure of \$42,988 for the SEG-SEG Canada Foundation cosponsored BC Porphyry field trip in August 2016. Awards paid of \$110,419 was a slight increase from 2016 (\$111,390). Excess of revenue over expenses was \$90,145, an increase over \$71,988 for 2016, due to lower expenses and increased donations, partly balanced by reduced investment income.

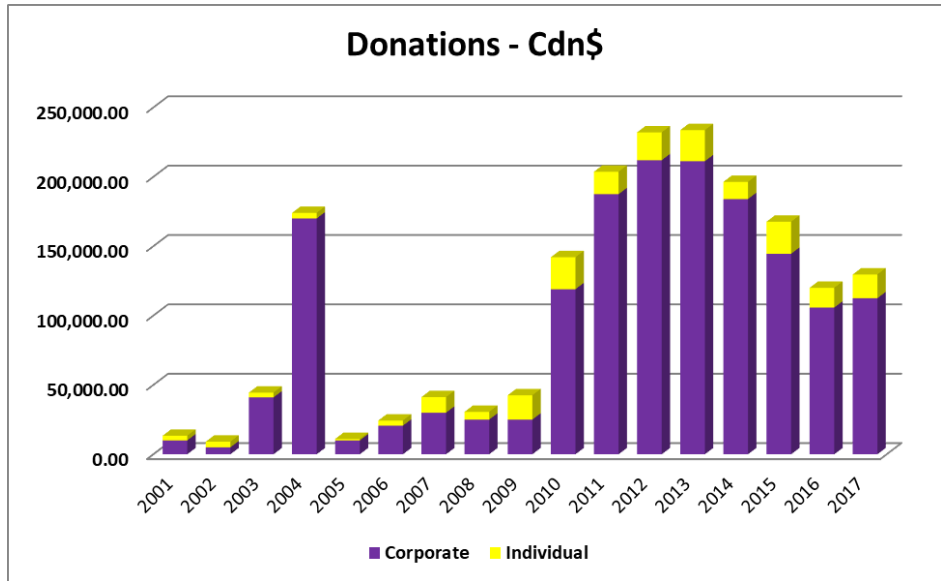


The Canada Foundation invests approximately 80% of its financial assets in a conservative portfolio of equities and bonds with Leith Wheeler Investment Counsel Ltd. (“Leith Wheeler”). The balance of the Canada Foundation’s cash is deposited in its chequing accounts and in GIC’s at minimal interest rates.

- 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.

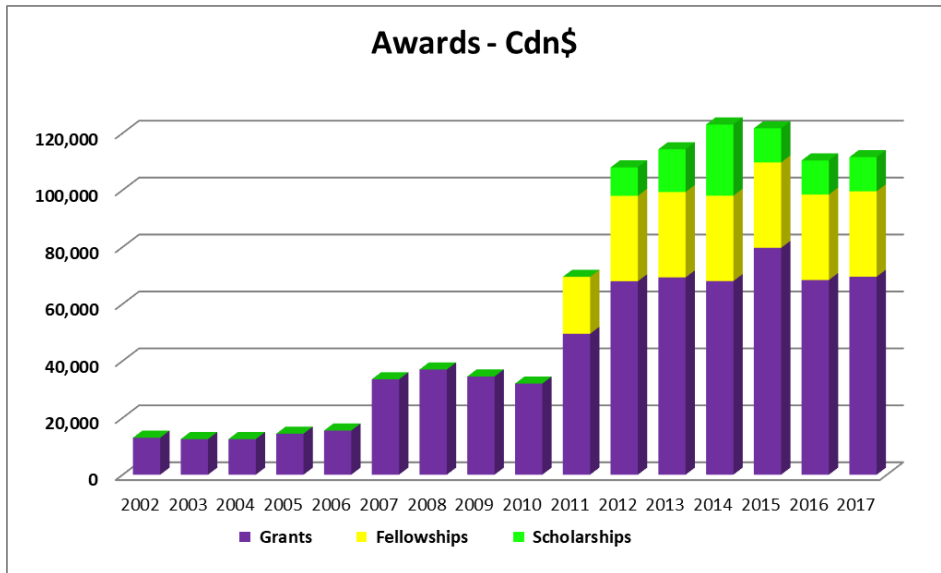
The total amount of the investment with Leith Wheeler at year end was \$1,013,497 with an annualized return of 10.9% (2016 - \$915,200, annualized return – 15.0%).

**Fundraising:** Kirstie Simpson, Fundraising Coordinator, oversaw a successful fundraising campaign that involved our entire board. Despite the continuing commodities downturn, we saw another year of strong donation levels at \$129,365 (2016: \$119,999). This effort was achieved in the face of a significant downturn in the fortunes of mining and exploration companies, both large and small. Twenty-four companies contributed to the 2017 campaign, raising \$112,739 (2016: 22 companies - \$105,750). Personal donations were up from 2016, coming in at \$16,862 from 104 donors (2016 - \$14,249 – 101 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.

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 2017 was \$69,546 (18 Grants), compared with \$68,390 (17 Grants) in 2016.

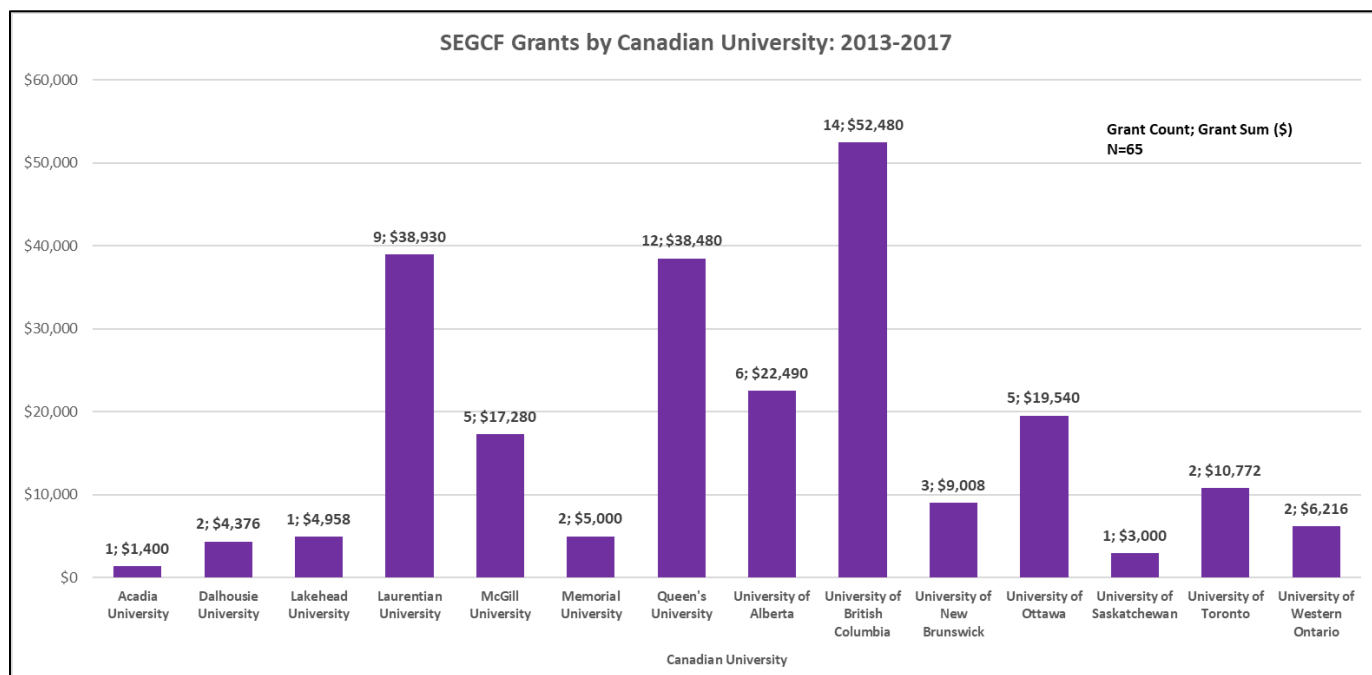
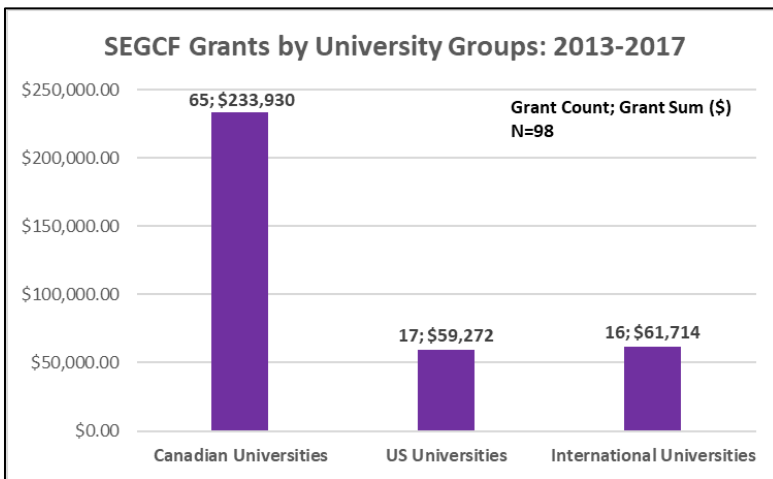


SEGCF Graduate Student Fellowships are available for a one-year term to students who intend to pursue a course of study in economic geology leading to a M.Sc. and/or Ph.D. degree in Economic Geology. Canada Foundation Fellowship awards remained at the \$30,000 level (5 Fellowships) in 2017, the same as 2016.

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 2016.

Our SEGCF Grant program continues to become more international. Over the past 5 years, 98 SEGCF grants have been awarded to students at Universities worldwide. Although overwhelmingly the students are studying at Canadian Universities (65 grants out of 98 were awarded to students at Canadian Universities), an estimated 70% of those students are non-Canadian. This year we supported students at Universities in Australia, Switzerland, China, Germany, Russia, Argentina, Greece as well as Canada and US (see bar graph and Appendix III).

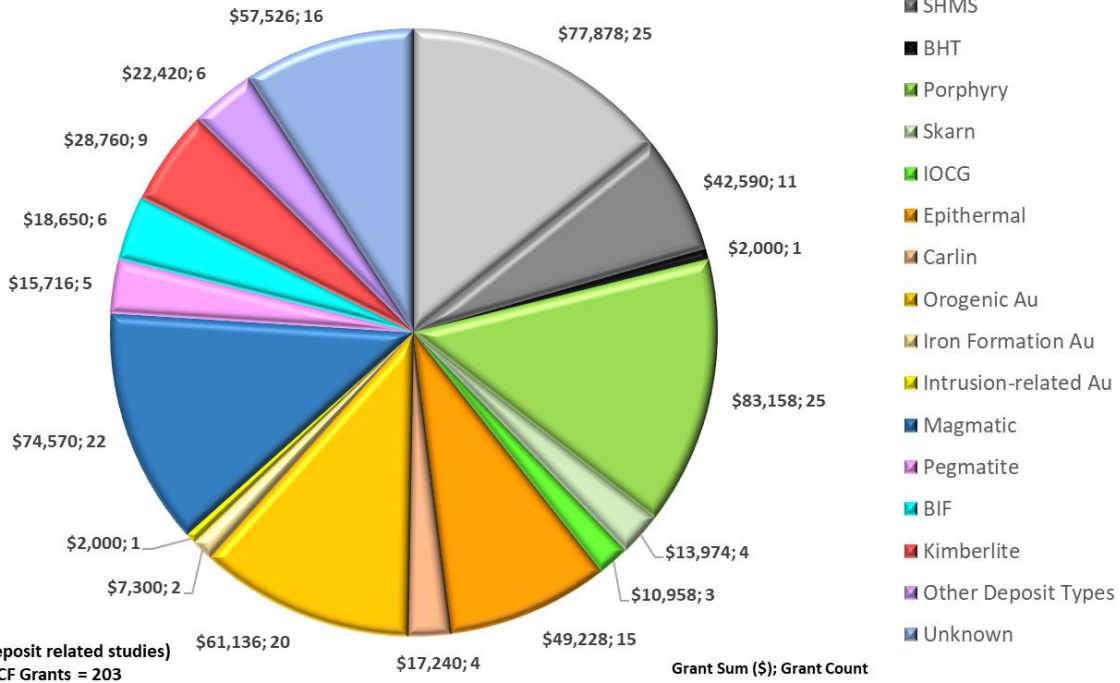
The SEG is making a concerted effort, through its Regional Vice Presidents and local members, to encourage greater participation by foreign students in the SEG Research Grants program.



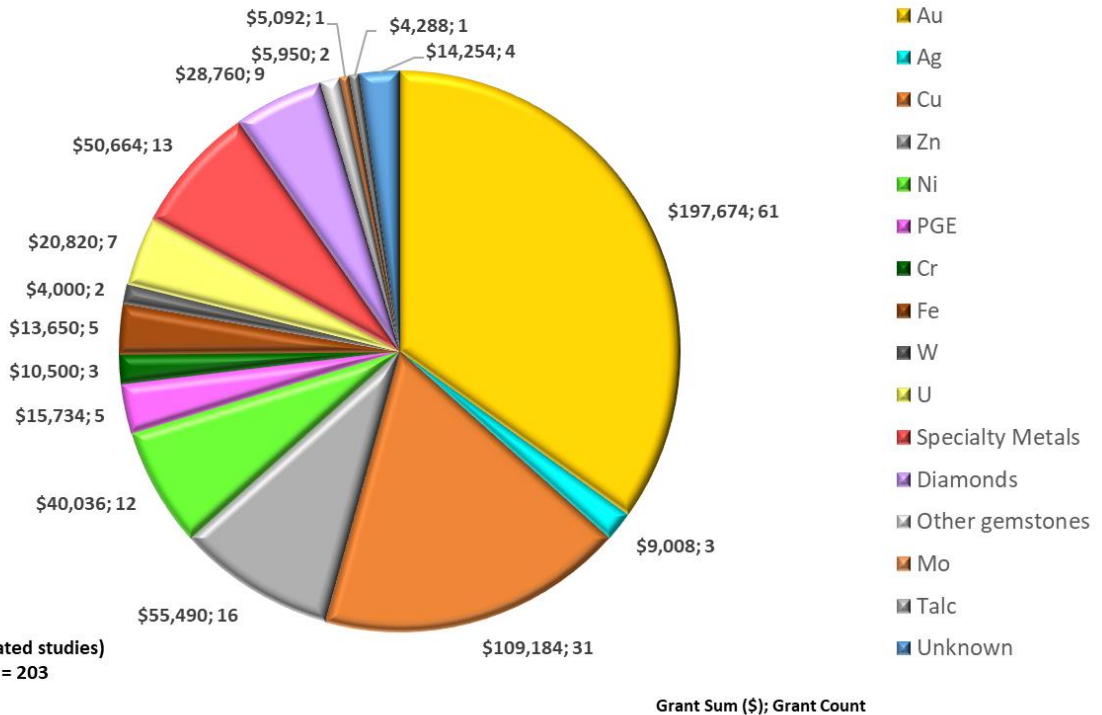
The bar chart above illustrates the number of SEGCF Grants and dollar amount by Canadian University for the past 5 years. Students from 14 different Canadian Universities have received SEGCF Grants during the period 2013 to 2017.

Since 2002, the Canada Foundation has awarded 203 SEG Grants (127 PhD projects, 75 MSc projects and 1 BSc project). Of these, 175 were for deposit-related studies and the balance were split amongst purely lab based, geochemical, 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



The following Canadian SEG members participated in the review process for the Grants: Gerry Ray, John Morganti, Ross Sherlock, Allan Galley, Andrew Davies and Dani Alldrick; 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 Dean McDonald, John Morganti and Laurence Robb. John remains on our Undergraduate Scholarship and Student Grant Committees. Laurence is outgoing SEG President and his contribution to our board during his one-year tenure is much appreciated.

Sincerely,

**Society of Economic Geologists Canada Foundation**



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Gerald G. Carlson, President

**2017 SEG Canada Foundation Team:**

Board of Directors

Gerald G. Carlson, President  
Dean McDonald, Vice President  
Hugh Stewart, Treasurer  
Brian G. Hoal, Secretary  
John Morganti  
Laurence Robb  
Jason Weber  
Lawrence Winter

Undergraduate Scholarship Committee

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Ross Sherlock  
John Morganti

Fundraising Committee

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David Mallalieu  
Dean McDonald  
Hugh Stewart  
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 – 2017

*Thank you!* **SEG Canada Foundation Corporate Sponsors 2017**



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DIAMONDS  **NOVO** RESOURCES  
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**Appendix II**  
**SEGCF Individual Donors – 2017**

Carolyn Anglin	Michel Gauthier	David Pawliuk
Brett Armstrong	Philip Geusebroek	Serge Perreault
Fred Barnard	Ralph Gonzalez	Mark Petersen
Michael Basha	Alex Gostevskikh	K. Howard Poulsen
Steve Beyer	Kenneth Grace	Vernon Rampton
David Blann	Twila Griffith	Edward Reeve
Robert Boyd	Mathieu Guay	Jeremy Richards
James Brenan	Jacob Hanley	K. Brock Riedell
David Bridge	Mark Hannington	Malcolm Robb
Daniel Brisbin	Thomas Hart	Francois Robert
Alexander Brown	Keiko Hattori	Alfonso Rodriguez Madrid
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Gerald Carlson	Glen House	Steven Scott
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Dominic Channer	Charles Jefferson	Robert Sharp
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Olivier Cote-Mantha	Sebastien Lavoie	Greg Stott
Jack Dann	Martin Lenters	Bruce Taylor
Alex Davidson	C. Michael Leshner	Ian Thompson
Michele Della Libera	Raymond Lett	John Thompson
Fionnuala Devine	Matthew Leybourne	Phillips Thurston
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Anna Fonseca	James Logan	Ian Walton
Antoine Fournier	Allan MacTavish	Sean Whiteford
James Franklin	Vivienne McLennan	Steven Williams
Andrew French	Patrick Mercier-Langevin	Rimant Zalnieriunas
Simon Gagne	Terry Mersereau	Marcos Zentilli
Claude Gagnier	Kevin Neyedley	Dawn Zhou
Alan Galley	Marco Nieto	



### Appendix III - SEGCF Student Awards – 2017

<b>Graduate Student Grants - 2017</b>			
<b>Name</b>	<b>Award (C\$)</b>	<b>University</b>	<b>Subject</b>
Alice Alex	\$4,422	University of Toronto	The effect of redox conditions on the speciation of sulphur and the solubility of Au, Cu, and Ag in magmatic hydrothermal fluids
Nicolas Derome	\$4,958	Lakehead University	Red Lake deposit alteration geochemistry
Aliou Djiba	\$3,350	University of Hamburg	Porphyry Cu-Au and epithermal Au-Ag-Te systems at Lemnos island, Aegean Sea, Greece: mineralogy of hydrothermal alteration and related mineralization
Eric Garcelon	\$2,948	University of New Brunswick	Gold and silver in the massive sulfide ores of the northern Bathurst Mining Camp
Aaron Hantsche	\$4,154	University of Geneva	Distal skarns as an ore-forming environment
Garrett Hill	\$4,288	Montana Tech	Using fluid inclusions and C, O, H and Sr isotopes to understand the genesis of dolomite-hosted talc mineralization in Montana
Dylan Langille	\$3,216	University of Western Ontario	The mineralogical characterization of peralkaline granites hosting HREE-rich pegmatites, Lac Brisson, Quebec
Bryan Maciag	\$1,876	Dalhousie University	Speciation of arsenic and antimony in silicate melts with implications for magmatic processes
Alexandra Malygina	\$4,154	Murmansk University - Apatity Branch	The petrogenesis and economic potential of reef-style PGE-V mineralisation in the Paleoproterozoic Gabbro-10 intrusion of the Monchegorsk Complex, NW Russia
John Meyer	\$4,154	Colorado School of Mines	Robotic underground mapping and surveying: System development, deployment, and data integration
Ana Paula Orellano Ricchetti	\$1,608	Universidad de Buenos Aires	Metallogeny of the Paramillos de Uspallata Pb-Zn-Ag vein deposit, Mendoza, Argentina
Jamie Price	\$3,752	Cardiff University	Gold mineralisation and tectonomagmatic evolution of Yalgoo-Singleton Greenstone belt, Western Australia
María Roman Alday	\$1,876	University of Geneva	Hydrothermal alteration in the Elastite porphyry Cu-Au-PGE deposit, Bulgaria: a quantitative mineralogy and mineral geochemistry study
Eliza Smith	\$4,958	University of Western Australia	The role of granitoid magmatism and associated magmatic-hydrothermal fluids in mineralisation processes in the Carajás Mineral Province, Brazil
Christos Stergiou	\$5,628	Aristotle University of Thessaloniki	Critical and rare metals in Tertiary magmatic-hydrothermal deposits at Serbo-Macedonian Metallogenic Province in Greece (Vathi, Gerakario, Pontokerasia, Laodikino)
Miguel Tavares Nassif	\$5,226	Colorado School of Mines	Interplay between gold mineralizing event(s) and structural evolution in the Archean southern Abitibi greenstone belt, Ontario, Canada
Mert Ugurhan	\$5,092	The University of Texas at Austin	Timing, Mineralization and Molybdenum Isotope Characterization of Cave Peak Porphyry Molybdenum Deposit, Culberson County, Texas
Zhuosen Yao	\$3,886	Institute of Geology and Geophysics - Chinese Academy of Sciences	Toward a preliminary demonstration for dynamic processes of sulfide droplet in magma conduit: evidence from ore texture in the Kalatongke deposit, NW China

### Graduate Student Fellowships - 2017

Name	Award (C\$)	University	Subject
Lindsay Debono	\$5,000	Western University	Characterization of the Onaping Intrusion at the Sudbury impact structure, Ontario, Canada
Vittoria Smith	\$5,000	Lakehead University	Isotopic systematics of the Ghost Lake Batholith, Ontario, Canada
Brodie Stroh	\$10,000	University of British Columbia	Timing and mechanisms of orogenic gold mineralization in western Yukon, Canada
Craig Green	\$5,000	University of Victoria	Ore deposit study on REE-fluorite mineralization in the Canadian Rocky Mountains
Chris Jenkins	\$5,000	University of Toronto	Re-examining the cyclic unit model in the Peridotite zone, Stillwater Complex, MT, USA. Implications for cumulate layer formation in ultramafic rocks

### Undergraduate Scholarships - 2017

Name	Amount (C\$)	University	Subject
Matthew Brown	\$1,000	Laurentian University	Origin and mode of emplacement of 'metabreccia' and 'footwall breccia' in the Whistle Offset, Sudbury Ontario
Patrick DesRosiers	\$1,000	Queen's University	Characterization of uranium and gold bearing phases of the Kitumba deposit
Chad Dundas Smith	\$1,000	Queen's University	Mineralogical, petrographic and lithogeochemical characterization of chromite rich units in the northern Lac Des Iles Complex near Thunder Bay, Ontario
Kate Gonzalez Woods	\$1,000	Dalhousie University	An experimental study of the effect of water on chromite saturation in komatiite
Andrew Jedemann	\$1,000	Lakehead University	The geochemistry and petrology of the Boyer showing within the Coldwell Alkaline Complex
Spencer Killins	\$1,000	Lakehead University	The Lac de Gras field DO-18 pipe classification, indicator mineral & diamond quality analysis
Robin Mann	\$1,000	Saint Mary's University	Mineralization occurrences and relationships between the northern Freegold properties, Irene and Goldy
Chantal Norris-Julseth	\$1,000	Brandon University	Characterization of gold mineralization, Eden deformation zone, Manitoba
Charlotte Stone	\$1,000	Laurentian University	Trace element distribution and mobility in diagenetic pyrite
Jacob VanderWal	\$1,000	Dalhousie University	A new multi-proxy approach to characterizing calcite fracture-filling processes, and the implications for geothermal energy systems
Elliot Wehrle	\$1,000	Laurentian University	Mineral chemistry of gahnite from Snow Lake, Manitoba: Implications of major and trace element variations in the context of a metamorphosed VMS system
Mariah Williams	\$1,000	Saint Mary's University	A geological classification of diatreme-associated W-Mo occurrence, Revenue, Dawson Range, Yukon