Resource Geoscience at Western:
The Science of Exploration
2016
Destination of Choice

Current supplies of mineral and energy resources are straining to satisfy growing global demand. To help meet this challenge, Western spearheaded an ambitious project, Resource Geoscience at Western, with a goal of becoming the destination of choice for students, researchers and industry partners invested in the science of exploration.

_resource_geoscience_at_western:_a_new_era_

Canada is world-renowned for training and fostering a specialized breed of entrepreneurial geologist-explorers. For more than five decades Western University has mentored some of the world’s most successful industry leaders. In 2007, the Department of Earth Sciences and Western launched an ambitious $22 million dollar project: Resource Geoscience at Western (RGW) to meet the demands of industry for a new generation of highly qualified personnel that can reduce investment risks through smarter exploration methods.

The first phase of our campaign is complete; new faculty members are now in place, new courses and field schools are underway, and major infrastructure investments have been made. With the help of our alumni and industry partners, the second phase is designed to make RGW the destination of choice for students and researchers focused on resource geosciences, particularly in the area of exploration and development of mineral, oil and gas resources.

The Western Advantage

• Major strengths in Resource Geoscience; Earth & Planetary Systems; Tectonic Processes and Natural Hazards; and in the Surface, Life and Climate of Earth
• Recognized leaders in the science of exploration
• Responsible for creating and refining some of the latest application of field methods for resource exploration
• Skilled in the latest scientific technologies to evaluate prospects and plays
• Strong foundation in educating geoscientists and explorers with practical and leadership skills to excel both in the field and in the boardroom

Partnering with Industry

RGW is committed to training the next generation of field-capable exploration geoscientists. Through collaboration with industry partners we can help keep Canadian companies at the forefront of exploration spending and success. Our projects will:

• Provide targeted solutions to exploration problems
• Develop new methodologies for prospect detection and resource discovery
• Apply state-of-the-art technology to develop novel exploration vectors
• Create pathfinding maps and models for new play development
• Use fresh ideas and apply new paradigms to successful exploration programs

Mentoring Students for Success

For more than 50 years, Earth Sciences at Western has been recognized for dedicated faculty members who are instrumental in preparing many graduates for successful careers in resource exploration and mining.

Today we are proud to have recruited a new generation of talent to continue this long tradition of mentoring students for success.

Burns Cheadle joined Western on September 1, 2009, as the Chair in Petroleum Geology. He has created a vibrant research program and popular courses that use industry-standard software to teach practical aspects of applied petroleum exploration methods.

On July 1, 2010, Robert Linnen began his term as the Robert W. Hodder Chair in Economic Geology. Since that time he has created an ambitious teaching and research program for RGW; together with Roberta Flemming, he leads the field trip to Bancroft, Ontario for students taking the Igneous Petrology course.
The Science of Exploration

RGW is building on the Department of Earth Sciences’ distinctive education and research strengths with a view to expanding our contributions on a national and global scale. Our faculty collaborate on a broad range of techniques and approaches to exploration, from the regional scale of tectonics and remote sensing, to the importance of biomineralization at the nanometre scale. We have the academic expertise and the industry and government networks to transform today’s challenges into tomorrow’s solutions.

A Broad Range of Research Expertise and Activity
The research foundation of RGW is built on a wide range of geophysical, geochemical, geological and GIS techniques that are being developed and applied by faculty and students. Our strengths include:

- Precious Metals—including Au, IOCG, PGE/Cr (Professors: Linnen, Duke, Banerjee and Flemming)
- Base Metals and Iron—including Sedex, VMS, BIF, volcanic, intrusion and sediment-hosted base metals and Fe (Professors: Duke, Linnen, Banerjee and Moser)
- Uranium and Rare Metals—including sediment-hosted uranium, Li-Ta pegmatite, Sn-W granite and skarn deposits (Professors: Duke, Linnen, Banerjee, Flemming and Corcoran)
- Diamonds and Other Precious Gemstones—(Professors: Flemming, Linnen, Moser and Banerjee)
- Basin Analysis and Stratigraphy—(Professors: Plint, Cheadle, Corcoran, Jin and Tsujiita)
- Reservoir Characterization—(Professors: Cheadle, Longstaffe and Banerjee)
- Hydrodynamics and Heat Flow—(Professors: Schincariol and Cheadle)
- Petroleum System Assessment—(Professor: Cheadle)
- Exploration Geophysics, Petrophysics and Seismic Monitoring—(Professors: Pratt, Cheadle, Atkinson, Tiamo, Shcherbakov and Jiang)

Sharing Resources for Discovery and Education
RGW faculty and students have access to dedicated and affiliated laboratories, including those for:

- Digital Well Log
- Fluid Inclusion
- Petrographic Analysis
- Processing & Modeling of Petrophyscial & Seismic Data
- Petroleum Reservoir Characterization and Modeling
- Stable Isotopes
- Mineral Analysis
- Access to EMPA
- (SEM-EDS, XRD)
- (SIMS, AFM, FTIR)
Recognition for RGW Faculty
• NEIL BANERJEE was awarded an Early Researcher Award by the Ontario Ministry of Research and Innovation
• NORM DUKE was awarded the GAC Duncan Derry Medal in 2010
• ROBERT LINNEN’S publication on “sulphur and gold” generated international media attention, including posting on the MSNBC Web site
• GUY PLINT was awarded the CSPG’s prestigious R.J.W. Douglas Medal in 2013
• GERHARD PRATT was the 2008 Distinguished Lecturer for the Canadian Society of Exploration Geophysicists

A Rock Solid Education
With the input and support of industry champions, RGW is pursuing the right priorities to develop an integrated undergraduate and graduate program that is preparing Western to become the destination of choice for the science of exploration in Canada:

Course-Based Master’s Program
— this one-year program will be at the forefront of the Earth Sciences, providing comprehensive and rigorous training, with cutting edge teaching and research in resource geology. It will graduate highly qualified professionals to meet the rapidly growing demand in industry.

Combined JD/MSc Degree—Western’s Faculty of Law is partnering with RGW to offer a joint Law/Master of Science Degree for individuals who want to make significant contributions to the economy and industry.

Field Schools—RGW offers practical education at both the undergraduate and graduate levels. Two of the latest field schools are the International Field School and the Exploration Geophysics Field School.

Professional Designation—RGW has established programs that fulfill the educational requirements for professional registration as a Geoscientist/Geologist/Geophysicist in Ontario, and other jurisdictions across Canada.

To learn more about RGW or to make a gift, please contact:

Paula Lyn Luchak, Director
Alumni Relations and Development, Faculty of Science
Western University
t. 519.661.2111 (ext. 86642) c. 519-868-7969
e. Paula.Luchak@uwo.ca

Western Graduates and Industry Leaders

The Department of Earth Sciences has attracted many students who benefited from the opportunity to learn from such faculty as Dick Hutchison, Norm Duke and Bob Hodder.

Many of these graduates have become industry leaders. In the past 30 years, more than 64 Western alumni have held or hold CEO, President, Vice-President or other high level executive positions in various mining or financial companies across Canada and the world.

We are proud of the accomplishments of these alumni. A small sample of these individuals includes:

Keith Barron, PhD ’97
Founder & Director, U308 Corp.
Director, Shear Diamonds Ltd.
Founder & Chairman, Urania Resources Ltd.

Bill Bell, BSc ’57
President
Portobello Investments Ltd.

Dean McDonald, PhD’90
VP Exploration
Hecla Mining Company

Duncan Robertson, BSc ’74
Managing Partner
SBM Inc.

Dale Wallster, BSc ’79
President
Mulgravian Ventures Corp.