Greetings from the Head

The Department of Earth Sciences at the University of Windsor is pleased to introduce the newest incarnation of our Alumni Newsletter. It has been quite a few years since our last newsletter, so this issue will be a more general recap of what has been happening here since the last issue some 5 years ago, and the state of the Department now. Our department’s alumni numbers has grown, as well as the number of programs we offer, both at the undergraduate and graduate levels. The Department has embarked on a few major changes during the last several years that involved program structures, faculty renewal, establishment of a Ph.D. program, and major success in funding, both infrastructure and research. With our 13 full-time faculty members, 4 emeritus, 5 support staff, 2 adjuncts, and a few post-doctoral fellows, our programs have been very productive and very busy.

Ihsan Al-Aasm

The Rise and Fall of the School of Physical Sciences

In 1998, the University of Windsor undertook a major restructuring of its academic divisions. The faculties of Science and Engineering were combined as the College of Science and Engineering under an Executive Dean, and departments were merged to form Schools within the College. Earth Sciences, Chemistry, Biochemistry and Physics merged to form the School of Physical Sciences under a single Director. Departments then became known as Programs. After a university administration turnover, it was realized that the move had not been successful, and the College was de-restructured in 2003 into two separate Faculties (the Faculty of Science, and the Faculty of Engineering), and the various Departments.

Earth Science Program News

In addition to the undergraduate Geology, Physical Geography, and Environmental Geoscience programs, we now have a Geoinformatics program, we run the Environmental Science program and are an important contributor and designer for the new Bachelor of Environmental Studies (B.E.S.) program, a showcase program for the University of Windsor.

The big news for Windsor’s graduate program is that Earth Sciences now has a Ph.D. program! Over the last several years, graduate enrollment has been rising steadily. At the moment we have approximately 25 graduate students.

Faculty and Staff News

Over the last several years we have had many retirements and, correspondingly, many new faculty and staff hires. For those that have been away for a while, here is the current Department of Earth Sciences faculty and staff roster, when new faculty were hired or when others retired, where they all came from, and what their research interests are.

New Faculty Hires:

Dr. Maria T. Cioppa: Post-doc 1999-2001, Assistant Professor hired 2001, NSERC University Faculty Award; Ph.D. Lehigh University; Research interests: Paleomagnetism and rock magnetism in hydrocarbon-associated rocks, Causes of remagnetization in sedimentary rocks, Environmental magnetism
Dr. David A. Fowle: Assistant Professor hired 2001; Canada Research Chair in biogeochemistry (Earth Sciences and GLIER); Ph.D. Univ. of Notre Dame; Research interests: how bacteria influence the geochemical cycles of the elements utilizing an integrated geochemical, hydrological, and microbial ecological approach

Dr. Phil A. Graniero: Lecturer hired 2000, Assistant Professor 2001; Ph.D. University of Toronto; Research interests: Hydrologic controls on wetland pattern and evolution, Environmental modeling and integration with GIS, Adaptive spatial sampling methods and real-time data acquisition tools

Dr. Ali Polat: Assistant Professor hired 2002; Ph.D. University of Saskatchewan; Research interests: trace element and isotope geochemistry of igneous rocks, geodynamics

Dr. Jianwen Yang (right): Assistant Professor hired 2002; Ph.D. University of Toronto; Research interests: geofluids, hydrogeology and geophysics

Dr. Ilhami Yildiz: limited term (1 year) Assistant Professor hired 2004; Ph.D.; Research interests: Bio/micrometeorology, complex systems modeling, energy efficiency, greenhouse engineering, heat pumps

Existing Faculty:

Dr. Ihsan S. Al-Aasm: promoted to Full Professor 1998, and Head of Department 2003-present; Ph.D. Univ. of Ottawa; Research interests: diagenesis, low-temperature geochemistry

Dr. Brian J. Fryer: Professor, Director of Great Lakes Institute 2001-present; Ph.D. M.I.T., F.R.S.C.; Research interests: environmental and analytical geochemistry; Other news: Fellow of the Royal Society of Canada 2001

Dr. V.C. (Chris) Lakhan: Professor; Ph.D. Univ. of Toronto, F.R.G.S (UK), C.E.S. (US); Research interests: remote sensing and GIS applications in resource management

Dr. Cyril G. Rodrigues: Associate Professor; Ph.D. Univ. of Carleton; Research interests: micropaleontology and paleooceanography

Dr. Iain M. Samson: promoted to Full Professor 2001, Department Head 1998-2003; Ph.D. Strathclyde; Research interests: geochemistry, hydrothermal systems and mineral deposits; Other news: appointed to the NSERC Grant Selection Committee 08 - Solid Earth Sciences, effective this year for 3 years; chair of Min. Assoc. Canada Finance Committee

Dr. Frank Simpson: Professor; Coordinator of International and Development Research, Education and Training (IDRET); Dr.Nat.Sc. Jagiellonian Univ. Krakow, P.Eng., PGeo.; Research interests: Reservoir Geology, Soil and Water Conservation

Dr. Alan S. Trenhaile: Professor; Ph.D. Wales; Research interests: coastal geomorphology and management

Dr. John D. Greenough: Adjunct Professor (currently faculty at Okanagan University College); Ph.D. Memorial; Research interests: platinum-group elements in igneous rocks

Retirements:

Dr. Peter P. Hudec: retired 2000, currently Professor Emeritus; Ph.D. Rensselaer Polytechnic, P.Eng.; Research interests: durability of construction materials

Dr. Placido (Pete) LaValle: retired 2002; Ph.D. State Univ. of Iowa
Dr. Terrence E. Smith: retired 2001, currently Professor Emeritus, Ph.D. Wales; Research interests: geochemistry of plutonic and volcanic rocks

Dr. David T.A. Symons: retired 2002, currently University Professor Emeritus, Ph.D. Univ. of Toronto, P.Eng.; Research interests: paleomagnetism, geotectonics and ore deposits

Dr. Andy Turek: retired 2001; Ph.D. Australian National Univ., P.Eng.

Current Staff:

Melissa Price (left): Geochemistry Technician hired 2002; B.Sc. Univ. of Windsor.

Alice F. Grgicak-Mannion (right): GIS/RS Coordinator hired 1997; B.E.S. Univ. of Waterloo

Sharon Horne (left): Head Secretary hired 2003

Heather Patterson (right): Secretary hired 2004

Dr. Denis Tetreault: Lab Demonstrator hired 2003; Ph.D. Univ. of Western Ontario; Research interests: Paleozoic invertebrate paleontology, paleoecology, sedimentology, stratigraphy

Staff Changes:

Christine Young, Departmental Secretary, moved to Math and Stats in 2002. After a series of temporary secretaries, Sharon Horne was snatched from Physics in 2003, and currently holds the position of Head Secretary. In early 2004, Paula Bolton was hired as assistant secretary, shared half-time with Chemistry. This summer Paula moved to the Faculty of Arts and Social Science, and Heather Patterson was hired into the position.

Geochemistry technician Ingrid Churchill moved to Biology in 2001, Misuk Yun held the position from 2001 to 2002, and is now in Calgary. Melissa Price currently holds the position.

After 3 years as the Laboratory Demonstrator, Ian Kerr (M.Sc. Univ. of Windsor 1997) left the department in 2000, and currently works for Barenco Inc. Brenda MacMurray held the position from 2000 to 2001, and currently works for the Faculty of Science at McMaster University. Dr. Michael Harris (B.Sc. and M.Sc. Univ. of Windsor) held the position from 2001 to 2003, and currently has a limited term instructor position at James Madison University. Dr. Denis Tetreault currently holds the position.

Other Changes around the Department:

The department has seen some physical changes recently. Work is finished on the 3rd floor geochemistry lab. The completely rebuild lab features all new lab benches and plumbing, and three new fume hoods.

What was the sieve room in the basement (B18) has been renovated for a new sample preparation lab for Dr. Ali Polat. Other changes are in store for the basement as well. Room 104 has been renovated as the new rock-magnetics lab for Dr. Maria Cioppa.

There is a new student computing resource lab with internet access. The high-speed Dell computers are available for use by both graduate and undergrad students. High-speed computers have also been placed in several teaching lab rooms so that courses can take advantage of computer-based materials. The graduate office space in MH Rm. 108 recently received all new furniture, and soon the room itself will benefit from a renovation.

New displays and posters are springing up around the department as well, such as a new Burgess Shale display on the ground floor.
Four Decades of Paleomagnetism in Canada

This special session was held at the 2004 Spring AGU / CGU / SEG Joint Conference to honour the research contributions of H. Currie Palmer (Western Ontario) and David T. A. Symons and as a perspective on the past and future of paleomagnetism in Canada. The session was chaired by Maria Cioppa (Windsor), Richard Ernst (GSC Ottawa) and M. Hamilton (Toronto). Highlights included Don Sangster’s (GSC Ottawa) tribute to David Symons titled “An economic geologists tribute to Davie Symons – paleomagnetist extraordinaire” and Bill MacDonald’s (SUNY Binghamton) tribute to Currie Palmer titled “Paleomagnetic Perspectives: Contributions of H.C. Palmer”. Other invited speakers included Rob Van der Voo (Michigan) and Henry Halls (Toronto), as well as the honourees.

Rock Magnetic and Paleomagnetic Laboratories - News

The RPM Labs are very pleased to welcome Dr. Ruiping Shi, who will be starting as a postdoctoral fellow the middle of August. Her expertise in a wide range of paleomagnetic and rock magnetic topics will be applied to a project titled “Environmental Magnetism of the Lake St. Clair / Detroit River / Lake Erie system: anthropogenic and natural variations”. This brings the complement of the laboratories to eight: Symons, Cioppa, Shi, PhD. candidates E. Szabo and J. Pannalal, and MSc candidates S. Cascadden, N. Garner and B. Igbokwe.

Dr. Ihsan Al-Aasm (right) at the 32nd IGC meeting in Florence, Italy.
Grants

Over the last 5 years, the department has acquired major funding from a variety of sources.

The Canadian Foundation of Innovation (CFI) has approved an Innovation Fund grant entitled, "Large Lake Ecosystems: A facility to quantify and model the impact of multiple stressors" in the amount of $1,966,420 to a team of scientists led by Earth Sciences Professor and Interim Director of the Great Lakes Institute, Dr. Brian Fryer. Professors David Fowle and Jianwen Yang are also part of the team. The total project is worth $5.5 million, including an anticipated match of $1.96 million from the Ontario Innovation Trust (OIT). Of the six applications sent to CFI for the 4th Innovation Fund competition from Windsor, this was the only one funded. The facility will include a laser ablation ICP-MS multicollector instrument, an environmental scanning electron microscope, and a variety of field geophysical equipment, including seismological, resistivity and EM instruments.

A New Opportunities grant to help 10 University of Windsor faculty members (3 from Earth Sciences) set up their research programs has brought $1,824,273 to the university in equipment, software, laboratory improvements and other support.

- Dr. Maria Cioppa received $184,664 for field and laboratory data acquisition and analysis equipment for her studies of rock magnetism.
- Dr. David Fowle received $199,850 for a facility for the study of nanoscale mineral-bacteria-contaminant water interactions. Dr. Fowle is a member of the Great Lakes Institute for Environmental Research (GLIER).
- Dr. Phil Graniero received $97,686 in support for an integrated field acquisition and modelling facility for the study of hydrologic interactions in patchy environments from point to catchment scales.

Dr. Jianwen Yang received a NATO Science Fellowship in the amount of $33,000 with NSERC providing $28,000 and the University of Windsor $5,000, as well as a CFI grant with matching OIT funds.

Dr. Ihsan Al-Aasm received NATO funding for 2003-2005 of $29,690 for his project “Hydrocarbon resources from Tunisia.

Dr. Placido LaValle received a grant for $2,490 from Parks Canada for Shoreline Erosion Monitoring.

Drs. David Fowle, Ali Polat, and Maria Cioppa were all awarded Premier’s Research Excellence Awards (PREA).

Dr. Maria Cioppa was awarded a Veteran Resources Ltd. industry grant for $15,000.

NSERC Discovery Grant Recipients 2004-2005
(Annual Amounts)

GSC 8 – Solid Earth Sciences
$19,000 Dr. Ihsan Al-Aasm, $18,450 Dr. Ali Polat, $33,680 Dr. Maria Cioppa, $21,400 Dr. Iain Samson, $26,000 Dr. David Fowle, $20,000 Dr. Jianwen Yan, $42,350 Dr. Brian Fryer

GSC 9 – Environmental Earth Sciences
$21,460 Dr. Phil Graniero, $17,920 Dr. Alan Trenhaile

Dr. Phil Graniero had his $48,620 in funding from the Centre for Research in Earth and Space Technology (CRESTech) renewed for 2004-2005.

Dr. Brian Fryer obtained funding from the National Oceanic and Atmospheric Association (NOAA) in the amount of $67,184 (Year 1), $29,131 (Year 2) USD for micro-elemental analysis of statoliths as a tool for tracking sea lamprey origins.

Awards

We are pleased to announce that Dr. Alan Trenhaile was the recipient of The R.J. Russell Award. This award is presented in recognition of an individual’s major contribution to the field of coastal or marine geography. The award was presented during the annual meeting of the Association of American Geographers. Congratulations Alan!

GIS Website Wins National Library Award

The Geographic Information Systems (GIS) Applications in Health website, a joint project of the University of Windsor's GIS Lab and the Windsor Public Library, has won the Canadian Library Association/Information Today Award for Innovative Technology.

Alice Grgicak-Mannion Earth Sciences’ GIS/Remote Sensing coordinator says the award was “a pleasant surprise.”
Madeleine Lefebvre, President of the Canadian Library Association presents an award for innovative technology to: Steve Salmons, CEO, Windsor Public Library; Jean Foster, Director of Support Services, WPL; and Alice Grgicak-Mannion, GIS/RS Coordinator, Earth Sciences.

The project added a GIS service locator to the Windsor-Essex County Health gateway site and provided illustrations of health statistics. As well as being used by people seeking health services, the site will also be used by grade 10 students who will learn about using Geographical Systems software to gather and share data online, and display it with easy-to-understand maps.

The project was led by the Windsor Public Library and the University of Windsor's GIS Lab, and funded by the Ontario Ministry of Culture. Research and data were provided by the Windsor Essex County Health Unit, the Teen Health Centre, the Multicultural Council of Windsor and Essex County, Information Windsor, the County of Essex and the City of Windsor.

Alice Grgicak-Mannion was also this year’s recipient of the University's President's Achievement award. This award is given annually to a staff member for outstanding contributions and dedication to the University community and excellence in the performance of their duties superior to the basic job requirements. Congratulations Alice.


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**Windsor in the News**

**New research group introducing GIS tools to monitor landslide hazards**

Earth Sciences Professor Phil Graniero is working with researchers at Queen's University, the University of Alberta, the Geological Survey of Canada, and BC Hydro to provide new tools to assess and manage landslide hazards in Canada.

The research group, called the Geotechnical Insitu Sensor Technology Network (GIST), is integrating Geographic Information Systems (GIS) and artificial intelligence techniques to extend the ability of a sensor network that monitors the Revelstoke Dam area in British Columbia.

"Many potential slope failure or land subsidence sites exist in Canada," says Dr. Graniero. "Should an unforeseen failure occur on these sites, lives could be lost. There is also the potential to disrupt communications and transportation, cause substantial property damage and prevent future use of the land."

Windsor students have been the recipients of a variety of prizes. Most recently, congratulations go to Daniel Rivas and Olugbemi (Mac) Amurawaiye, who won the Canadian Sedimentology Research Group Award for best student poster during the GAC-MAC meeting. The award was a copy of the recent publication, "Encyclopedia of Sediment and Sedimentary Rocks", and was given to Daniel by Dr. Denis Tetreault at the conference.

Congratulations also go to Nicoli Garner and Daniel Rivas for runner-up honourable mention for the GAC Jerome H. Remick III Poster Prize, an award given for scientifically and aesthetically meritorious posters chosen from all posters presented at GAC-MAC.
Authorities use remote and local monitoring techniques to evaluate known hazardous sites and to detect new sites that pose significant risk. Technologies range from remote sensing interferometry, capable of detecting small changes in topography, to in-place sensors that track motion in the ground and send signals to active monitoring systems.

The goal of GIST is to provide the experts who are monitoring these sites with new tools that will automatically analyze incoming data and detect early, subtle evidence pointing to a landslide event. This will not only speed routine analysis, it will extend their ability to perform tests for subtle effects, and provide ways to test entirely new hypotheses about how hazardous sites evolve and fail.

GIST received funding from Geomatics for Informed Decisions, a National Network of Centres of Excellence, for $100,000 per year until 2005. GEOIDE recently announced that GIST Phase II will be funded at $127,500 per year for 2005-09, with an additional $50,000 per year from the Railway Ground Hazards Research Program.

**UNESCO Honours UWindsor Project**

The Netherlands Organization for International Cooperation in Higher Education in cooperation with UNESCO's Management of Social Transformations Programme chose a project on water supply in India for its listing of Best Practice in the Use of Indigenous Knowledge. Project leader was Dr. Frank Simpson. UNESCO's Management of Social Transformations Programme (MOST) is a research programme designed to promote international comparative social science research. For more information on this publication go to http://www.unesco.org/most/bpindi.htm.

It is with great sadness that we announce that Dr. Peter Sonnenfeld passed away on April 1, 2004. Dr. Sonnenfeld was the founder of the Department of Geology and taught here for many years until his retirement in 1989. He was known both nationally and internationally for his research on evaporites and was active in this field until recent years. Peter obtained his Bachelor's degree at the Komenius University, Bratislava and Ph.D. from Charles University, Prague. He came to Canada in 1948, following the communist takeover in his native Czechoslovakia. In 1966 he came to Windsor with the express purpose of establishing the Geology Department at the University. Prior to his arrival, a single geology course was taught by Fr. Faught. The Department came officially into being in 1967. Peter Sonnenfeld became the first head of the department, a position he held until 1973. He was also instrumental in establishing the Geological Engineering programme. Peter retired in 1989 and shortly thereafter moved to Toronto.

**Earth Sciences to host international conference**

Earth Sciences professors at the University of Windsor have persuaded a major international geological conference usually held in Europe to come to Windsor for their next meeting. "This is quite an honour for us to be chosen," said Dr. Ihsan Al-Aasm. "This is the first time the meeting will be held outside of Europe."

Al-Aasm and his team including Professors Maria Cioppa, David Symons, Iain Samson, Jianwen Yang, Ali Polat and Phil Graniero presented successful bid to host Geofluids V in Windsor in 2006.

Geofluids IV attracted some 250 specialists from industry and universities to Holland recently. The conference collects and publishes the most recent research on Earth's crustal fluids that impact on the developments of oil and gas exploration, mineral deposits, groundwater and similar initiatives worldwide.

**Alumni News**

Tell us what you’re up to!! We’d love to put Alumni news on the Departmental website. Send us your current contact information, and any contact information you may have for other alumni of Windsor Earth Sciences so that we can keep our alumni database up-to-date. We keep the database information confidential. Then take a few minutes and let us know what news you might like us to include on the webpage and in the next Alumni Newsletter. We will only make public information that you give us permission for.

Mike Harris (B.Sc. 1991, M.Sc. 1994, Geology, Ph.D. 1998 at Western though his research was done at Windsor with Dr. Symons) has a limited term Geology Instructor position at James Madison University, Harrisonburg, Virginia.

Adrian Forsyth (grad, B.Sc. Geology Co-op Honours, 2003): Currently working on her M.Sc. with Dr. David Fowle here at Windsor.

Shelie Cascadden (B.Sc. Geology 2000) is a staff geologist for Somat Engineering, Detroit, and is also currently working on her M.Sc. with Dr. Maria Cioppa here at Windsor.

Melissa Flore (now Price) (grad, B.Sc. Geology Co-op Honours, 2002): Currently the geochemistry technician in the Department of Earth Sciences at the Univ. of Windsor. Melissa is also got married in September. Congratulations Melissa!!

Tim Searcy (B.Sc, 1993) has just been appointed as President and CEO of Luna Gold Corp. (Vancouver). From the Press Release:

Wed Jun 30, 2004
Luna Appoints New President & CEO
Vancouver, June 30, 2004 -- Luna Gold Corp. (TSXV-LGC.U) ("Luna") is pleased to announce that Mr. Tim Searcy has been appointed President and Chief Executive Officer of the Company.

Mr. Searcy holds an M.Sc. in Geology and an M.B.A., both from the University of Toronto. Prior to joining Luna, Tim worked in the corporate offices of Placer Dome where he held positions in Treasury, and more recently Corporate Development (M&A). Before obtaining his M.B.A. and joining Placer, Tim worked as an Exploration Geologist in Canada and Asia. As an Exploration Geologist Tim worked with Falconbridge and BHP, as well as a number of junior companies.

"Tim's knowledge of the mineral exploration and precious metals industries combined with his business background makes him ideal for executing Luna's strategy", said David De Witt former President and current director.

About Luna Gold Corp.

Luna Gold Corp. is a mineral exploration company engaged in the acquisition, exploration, and development of mineral properties, with a focus on precious metals in China. Luna Gold has a well-qualified team which has extensive experience in China and has experience with start-ups, acquisitions, reorganizations, exploration, development, financing, construction, and mine operations.

Recently Completed Theses (2002-2004)

M.Sc.


Scarlat, Magdalena. 2002. Mercury dynamics in sediments and the foodweb of the Detroit River. (Fryer)

Song, Xinyu. 2002. Fluid inclusion studies of the Pea Ridge Fe-Oxide REE deposit, Missouri. (Samson)

Arifuzzaman, Kazi. 2003. A geostatistical and geographic information systems study of grain size characteristics from accreting and eroding beaches along the Guyana coast. (Lakhan)

Crowe, Sean. 2003. The role of crustal contamination and volatiles in the genesis of the Marathon PGE-Cu deposit: Constraints from mineral-scale LA-ICP-MS Pb isotope. (Samson)

MacLean, Lachlan. 2003. Quantifying contaminant-bacteria interactions. (Fowle)

Rivas C., Daniel A. 2004. Dolomitization of the Devonian Wabamun carbonates in the Gold Creek Field west central Alberta, Canada. (Al-Aasm)


B.Sc.

Higginbottom, Carmen Marie. 2002. The adsorption and reduction of chromium by Bacillus subtilis in the presence of a co-contaminant. (Fowle)

Flore, Melissa Melanie. 2002. Rock magnetic properties of the “Nordegg” member, western Canada sedimentary basin. (Cioppa)

Morgan, Marilyn. 2002. Soil magnetic susceptibility and pollution mapping of camp Henry in Point Pelee National Park. (Cioppa)

Bondy, Corrie. 2003. Investigating heavy metal mobility and bioavailability in the Detroit River. (Fryer)

Daly, Christine. 2003. Abundance and isotopic composition of carbon and nitrogen in soil organic matter from Point Pelee Marsh. (Al-Aasm)

Armstrong, Ashley. 2004. The rare earth elements: Lanthanides adsorption onto Bacillus subtilis. (Fowle, Fryer)

Chisholm, Gregory. 2004. Sampling Methods for the bioavailability of heavy metals in an aqueous media. (Fowle)


Hariprashad, Saveka. 2004. Spatial variations of heavy metals in fine grained surface sediments from the Guyana coast. (Lakhan)


Musson, Brandon. 2004. Using GIS to predict the potential impacts of climate change in Southwestern Ontario. (Graniero)

Patrick, Katie. 2004. Petrographic and geochemical characteristics of the 2.5Ga Wutaishan Greenstone Belt, North China craton: Implications for petrogenesis. (Polat)

Recent Publications 2003-2004 - Department of Earth Sciences


This, and future newsletters, will be available as full-color pdfs on the Department of Earth Sciences website: www.uwindsor.ca/earth