Spring has arrived …. finally!

CONGRATULATIONS TO:

John Gartner, who received an honorary doctor of science. Gartner is a founding partner of Gartner Lee Ltd., the highly successful consulting firm with a history of leadership in environmental and engineering geology. Gartner was also appointed as adjunct professor in our department. The Canadian Geotechnical Society awarded him the R.F. Legget Medal, the Robert F. Farvolden Award and the Thomas Roy Award.

Nandita Basu, Assistant Professor in Earth and Environmental Sciences and in Civil and Environmental Engineering on being awarded an Early Research Award to investigate “impacts of nitrogen and phosphorus on the ecosystem in an effort to improve water quality in Ontario” and Brian Kendall, Assistant Professor in Earth and Environmental Sciences winning support under the
Ontario Research Fund-Infrastructure Support program for “study of metal concentrations and isotope compositions will improve natural resource exploration activities and reduce environmental contamination”. Congratulations and best of luck to both of them!

Nandita Basu and her husband Dipanjan on the birth of their baby boy, Rayan Basu, born May 24th, 2014!!

Aaron Bustard, M.Sc. student who has been selected to receive a Graduate Student Fellowship from the Society of Economic Geologists Foundation.

Caroline Karubin, Jianing Zhang, Phillip Van Lane, Graham Karner, Chstry Roualt, Christopher Morgan and Xiaohang Zhou, Earth and Environmental Sciences undergraduates who all received the Bickell Scholarship.

Rosalind Menzies who received the 2014 Duncan McIvor Award.

Stephanie Slowinski for being the very first recipient of the Ron Kellerman Scholarship in Geochemistry.

Kate Tateishi, Daniel Birch, Sharon Lau and Caroline Karubon for receiving the 2013 Brantford Lapidary Award.

Matthew Cannon, recipient of the Gwilym Roberts Scholarship. Matthew was formally presented with the award at our PDAC reception in March 2014.

Joel Angel, M.Sc. student, who received at GAC/MAC, the 2014 Jack Henderson Award for the best M.Sc. thesis from the Structural Geology and Tectonics Division of the Geological Association of Canada. His thesis was entitled “Structural and geochronological investigation of the southern Alexander terrain in the vicinity of Porcher Island, northwestern British Columbia.” Joel was co-supervised by Shoufa Lin and Cees Van Staal, an adjunct professor in our department from the Geological Survey of Canada.

Helen Powley, Ph.D. candidate who received the Golders Associates Graduate Scholarship in Water.

Aaron Bustar, M.Sc. student, for receiving the 2014 Society of Economic Geologists Fellowship (SEGF) worth $7500. This prestigious international award is given to students who intend to pursue a course of study in economic geology leading to a Professional Master’s, Master of Science (M.Sc) and/or Ph.D. degree. For more information go to the Society of Economic Geologists website.

Cailin Hillier is one of two cross-Canada recipients of a $5000 scholarship from the Agricultural Institute of Canada Foundation (AICF) 2014 Dr. Karl C. Ivarson Scholarship for graduate students in soil science and related studies. She is recognized for her outstanding academic achievements, areas of study, leadership and career interests.

Wesley Hamilton who received the David M. Forget Memorial Award in Geology.
EARTH 10: ENHANCING COMMUNICATION SKILLS FOR EARTH SCIENCE STUDENTS

by Brewster Conant Jr.

EARTH 10 was offered for the first time this year, and from all accounts it was a tremendous success thanks to the efforts of numerous students, staff, and faculty! The objective was to help students be better prepared for assignments, group work, oral presentations, and eventual thesis writing. The course was co-taught by Dr. Brewster Conant (of our department) and Judi Jewinski (Special Advisor to the Provost on English Language Competency), who combined geoscience content and approaches to problem-solving with specific learning objectives. Although the course was primarily designed for China 2+2 students, it would benefit any student wishing to improve basic writing and communication skills.

Highlights of the course included a field trip to the Elora Gorge (led by Tom Edwards, Brewster Conant, and Jen Parks), a tour of Earth Sciences labs (with presentations by Richard Elgood, Julia Jamieson-Hanes, Cameron Toy, Jeff Langman, Marianne Vandergriendt, Maria Mesquita, Andrew Wiebe, and Lindsay Bowman), and a tour of the Peter Russell Rock Garden led by Peter himself! A key feature was the involvement of peer mentors, Earth Science undergraduate and graduate students who met with the EARTH 10 students and helped them with their assignments and provided advice and support (thank you to Alex Krapf-Jones, Lenny Trinh, Alex Sheen, Kathy Feick, Joey Ju, Nicole Patrizio, Caroline Karubin, Clara Xiong, Cathy Wang, Lingyi Kong, Peter Jia, and Yale Wang). Special thanks go to the students who took the course - their enthusiasm, diligence, and positive attitude made it wonderful to teach and be a part of this course. Feedback from the participating students has been overwhelmingly positive.

EARTH 10 offers a model for other departments seeking to increase support and integration of the growing number of 2+2 students campus wide. The course concept was the culmination of many meetings and thoughtful discussions with department members Changchen Li, Shoufa Lin, Corina McDonald, Tom Edwards, Shaun Frape, Jen Parks, as well as Melinda Meng from the Faculty of Science. Funding for this pilot course came from a Centre for Teaching Excellence (CTE) Learning Innovation and Teaching Enhancement (LITE) grant. The principal investigators (Brewster, Judi, and Julia Williams of the English Language Institute) will be releasing a comprehensive evaluation of the course in the new year.

If you are interested in being a peer mentor for next year (which, by all accounts, is a lot of fun), helping with the field trips, or finding out more about the course, please contact Brewster (bconantj@uwaterloo.ca)
The EARTH 10 class and peer mentors getting a tour of the Peter Russell Rock Garden (photo by Brewster Conant)

The EARTH 10 class and new Earth Sciences students examining the landforms along Irvine Creek during the Elora Gorge trip (photo courtesy of Lenny Trinh)

LOGAN DAY 2013

Logan Day was held on beautiful day - Thursday, September 17, 2013 and again was a great success (see next page for some pics). We give a big thanks to the sponsors for 2013:

Gold Level Sponsors: Conestoga Rovers and Associates; Ecometrix Inc.; Geosyntec Consultants; More Than Engineers (MTE); University of Waterloo; BGC Engineering; The Water Institute.
Silver Level Sponsor: Kontek
Bronze Level Sponsor: Terraprobe
Farvolden Day was held on Friday, October 25, 2013. Our very own Jim Barker was the speaker and the title of his talk was “Canada’s Oil Sands: Evolving Groundwater Issues”. We had the best turnout yet … almost 300 people! The morning Groundwater Research Symposium featured Carol Ptacek (Pharmaceutical compounds: Fate in groundwater and applications as tracers); Scott King (Oil sands and groundwater: So, why do I need a hydrogeologist?) and Everton de Oliveira (Waterloo hydrogeology experiences in Brazil and how we could do better). A reception was held after the Farvolden Lecture which was very well attended by faculty, staff, students and many alumni. Congratulations to Ph.D. candidate Gabriel Bacca-Cortes who was the recipient of the Farvolden Scholarship!

The day before Farvolden Day was a game of golf and dinner. However, the weather did not cooperate as you can see below!
We are very excited to announce that the 2014 speaker will be Dr. Peter Fritz. Dr. Fritz began his academic career as a doctoral student in one of the world’s first environmental isotope laboratories at the University of Pisa (Italy) in 1962. He has since done extensive research with environmental isotopes, including studies in isotope hydrology, paleoclimatology, and the development of methods for dating of groundwater. He was responsible for the development of isotope hydrology in Canada, first at the University of Alberta in Edmonton and then at the University of Waterloo. He later moved to Leipzig to become the Founding Scientific Director for the Centre for Environmental Research in Germany, where a staff of more than 1,000 scientists and technicians are entirely devoted to environmental research. **Mark Friday, October 24th, 2014 on your calendars!** More details on Farvolden Day to come!

**MUSEUM NEWS**

*by Corina McDonald*

A lot of activity has happened behind the scenes for the departments’ Earth Sciences Museum this year. Here are just a few of the highlights.

On March 11th an 11 x 13m foot mastodon mural was attached to the yellow brick wall in EIT. Mark Rehkopf, a local artist who has worked with the museum in the past, digitally painted the mural. This was the first phase of a
two-phase project. The second phase – an augmented reality mastodon story – is near completion and will be housed in two i-pads directly across from the mural on the second floor. The animated story has been created by Meld Media, a Toronto based company that produced 3D dinosaurs at the Royal Ontario Museum (ROM) in 2012. Since then they have been working closely with museums across North America to produce augmented and virtual worlds for enthused visitors. If you are like most and don’t know about augmented reality, visit the Layar website www.layar.com or check out the new mastodon display this July! The mastodon mural was the brainchild of Peter Russell and Peter Morris (one of the museum board members). This project cost around $100,000 and was funded by the Ministry of Culture Tourism and Sport – Museum Technology Fund, Peter Morris and Mona Negoita, the Canadian Geologic Foundation and support by Earth faculty, alumni and friends of the museum.

*Lights out in the calcite display*

You may have noticed a few lights out in the museum recently. Don’t worry! It only takes one geologist to change a light bulb but I draw the line at electrical work. The museum is converting all display bulbs to LED. Now that the wiring needs to be fixed under a few first floor displays we are requesting new wiring that supports LED strip lighting. It not only saves electricity and reduces heat output on our beautiful rocks, minerals, fossils and artifacts; I haven’t had to change an LED bulb since November 16th, 2013. Prior to that date burned out bulbs were changed every single day. Many of you have already noticed our large piece of petrified wood has moved from the first floor to the second in EIT and is now supported by a hardy frame. The frame, built by Andrew Dube in the Science Machine Shop, is the first step in creating a petrified wood display and consolidating many of the unique specimens that have been donated to the museum over the years.

*Manuel Arab – 4th year student in Earth Sciences – Geology*
Over the next few months the display will transform into a scene from one of the most famous areas to see petrified wood; the Petrified Forest National Park in Holbrook Arizona. This is where our petrified log started its journey. This large specimen was purchased from Jim’s Petrified Wood Company and donated to the museum by Jim Reimer.

Dr. Jean-Bernard Caron (Curator of Invertebrate Palaeontology at the ROM) and his team have discovered a brand new fossil site akin to the original Burgess Shale site in Yoho National Park, BC. This new site, close to Marble Canyon in Kootney National Park, has revealed and has the potential to reveal many new specimens. Thanks to the support of our alumni and the department we will be sending one of our own undergraduate students, Manuel Arab, with Jean-Bernard to this new site in July and August. Manuel is very excited to have this unique opportunity ahead of him and will be completing his 4th year thesis on one aspect of the expedition.

NEW EQUIPMENT FOR FIRST YEAR HYDROLOGY LABORATORY CLASS

Earth 123L (Field Methods in Hydrology) is a popular field course. Students invariably say one of the best parts of it is they get to go to the field and get hands-on experience making hydrological measurements using actual equipment. Students learn to install mini-piezometers and seepage meters in streambeds, visit the UW meteorological station to learn about the sensors and measurements being taken, make evaporation pan and precipitation gauge measurements, monitor groundwater levels and stream flow rates, sample groundwater from wells, and make water quality measurements. Most of our undergraduate courses have had increasing enrollments in recent years, and this course had a 25% increase since last year. In the spirit of maintaining our tradition of an undergraduate teaching program that emphases hands-on learning in both the field and the laboratory, this increase in enrollment meant the need for more equipment.

We are now the proud owner of: a new stainless-steel Class A evaporation pan with a stilling well (NovaLynx Corp.); three new metric hook gauges (NovaLynx Corp.) for measuring water levels in the new evaporation pan and existing pans; a new tipping bucket rain gauge, anemometer (wind speed gauge), and a Micro-station datalogger (Onset Computer Corp.); and several sets of colorimetric water quality test kits for measuring dissolved oxygen and nitrate in water (CHEMetrics Inc.). Throughout the course, the EARTH 123L students really seemed to appreciate the opportunity to learn to operate field equipment and gather data first-hand. We are confident their glowing endorsements of the course will contribute to even greater enrollments next year. Dr. Brewster Conant, Research Assistant Professor and Department of Earth Sciences Teaching Fellow, is the course instructor. Feel free to contact him for more information about the course (Email: bconanti@uwaterloo.ca).
Student making a water level measurement with a new hook gage in a Class A evaporation pan while others look on and await their turn.

FAREWELL, GOOD-BYE, AU REVOIR

Dr. Tom Edwards is retiring July 1, 2014!! We will miss Tom who joined the department in 1987 and was inducted into the University’s 25 Year Club last year. He has been a central member of the environmental isotope group. His research in recent years has focused on northern Canada, mostly in the Lake Athabasca region. He has always been a popular teacher in both second year Mineralogy and third year Earth Systems. His enthusiasm, regardless of weather conditions, on the Bancroft field trip has been infectious, and likely has contributed to enrollments in that course nearly doubling in recent years. We wish Tom all the very best for a long and happy retirement in Lotus Land on the west coast of Canada. Don’t forget the wellies and a warm rain coat!

We were very sorry to say au revoir to Carl Guilmette who has accepted a position at Laval University. Although he was with us a few short years Carl was very well liked and respected by faculty, staff and students. He is seen here at his Grad House send off with a shirt to remember us by!