



## Postcards from Biology



Biology student Teela Jones with a captured turtle for population survey work during the Malaysia Field School Program. Photo Credit: W. Hintz

Dr. Patrick Gregory was recently appointed honorary professor of Herpetological Conservation from 2008-2012 at the University of Kent in the United Kingdom. Dr. Gregory's research includes the ecology of reptiles and amphibians, especially the population ecology and life histories of snakes. One of the authors of *Amphibians & Reptiles of British Columbia*, Dr. Gregory's interest is not just in British Columbia, but other temperate-zone snakes including those in southern England, conveniently located near the Durrell Institute of Conservation & Ecology (DICE) where he will be working.

Annual trips to Canterbury have allowed Dr. Gregory to monitor a colony of grass snakes that he can now observe more closely. They have a fascinating behaviour: when confronted or captured, they play dead and exude a foul odour, a response that is of great interest to a snake biologist!

### FARTHER AFIELD

The Malaysia Field School Program sent eight UVic students for six weeks to explore tropical ecosystems through a combined lecture and fieldwork organized in collaboration with the Universiti Sains Malaysia. Students visited the Kuala Gandah Elephant

Sanctuary, a palm-oil plantation, and an herbal medicine garden, they captured bats and turtles for population survey work and studied insect diversity and ecology, and they also undertook forest canopy walks.

A particular highlight was a visit to Kuala Terengganu, a model beach for turtle conservation, where turtles come ashore at night, dig a pit and lay their eggs. The eggs hatch baby turtles that ran across the beach, over students' hands and into the sea. The students helped the conservation effort by transplanting some turtle eggs from other beaches to Kuala Terengganu. During the day at the same beach the students snorkeled among coral reefs, observed reef fish and surveyed the local population of the Crown-of-thorns starfish (*Acanthaster planci*), a coral-eating animal that represents a major threat to tropical reefs.

The Chair of Biology, Dr. Will Hintz, who helped to teach the highly successful program this year noted that, "This program is not ecotourism. The students are not going through paths trodden by hundreds of people, but go to reserve areas that are not accessible to the public, areas that are only accessible to government scientists and university researchers. Our students are brought there by the most informed professionals and learn by example."

*"The Malaysia Field School was the best course that I have taken through UVic. It has opened my eyes to issues across the world that I never put much consideration into."* -Teela Jones

## Scientific Olympians

The Faculty of Science saw two of its Alumni off to the Summer Olympics in Beijing, China this August. Both athletes competed in rowing at the Shunyi Olympic Rowing-Canoeing Park. Biology alumni Rachelle DeJong, class of 2005, placed second in the women's Quad salls B-final. Mike Lewis, a Chemistry alum of 2006 raced to a bronze medal finish in the Lightweight men's fours at Shunyi Park. Congratulations to both Rachelle and Mike!

*And did you know that 25% of all Vikes athletes are Science students?*

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Tom Pedersen, PhD, FRSC, FAGU  
Photo credit: UVic Photo Services

## Moving Right Along Message from the Dean...

After squaring away the Department of Mathematics and Statistics in the new Social Sciences and Math Building this past spring, the Faculty of Science is on the move again. As we prepared to greet a new crop of students for the new school term the move into the new Ocean, Earth and Atmospheric Sciences building was already underway. This magnificent new structure is housing the School of Earth and Ocean Sciences (SEOS), the synthetic chemistry group of the Department of Chemistry, and the Canadian Centre for Climate Modelling & Analysis (CCCMA) — Environment Canada's national climate-modelling research group. We have also installed on the building's roof a state-of-the-art and much larger dome for astronomy research and education. The dome will soon be equipped with the finest and most modern telescope at any university in Canada, thanks to

the wonderful generosity of a private donor. Two large and acoustically outstanding lecture halls on the ground floor complete this exceptional new building.

Winston Churchill once said, "We shape our buildings, thereafter they shape us." Churchill was only partly right. This new building will help us shape future understanding of the Earth as a system, a system now under threat by the global-scale impact of human society. Human-induced climate change is now upon us, and by placing the federal government's flagship climate modellers into the very heart of UVic's earth-system science research effort, led by SEOS, we will take climate research to a new level in Canada. I fully anticipate that this convergence of effort will make a tremendous difference for Canada — indeed, we expect intellectual sparks to fly!

## UVic at centre stage in Particle Physics

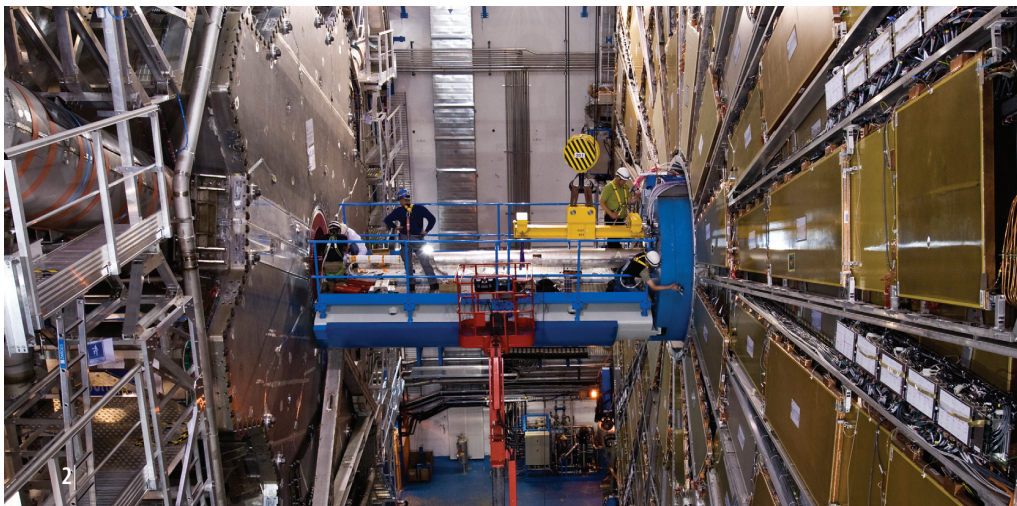
International attention is currently focused on the Large Hadron Collider (LHC) at the European Laboratory for Particle Physics, CERN, near Geneva in Switzerland, where proton collisions of the highest energy ever produced in the laboratory are soon to occur. Counter-circulating proton beams in the 27-km long accelerator will collide at the center of the ATLAS particle detector, designed to study the products of these collisions. UVic scientists made crucial contributions to this landmark project in basic research.

The ATLAS detector, a 7,000-ton and 45-metre long detector, and the LHC can be likened, in a sense, to the most powerful microscope ever built. It will allow physicists to look where no one has looked before, and explore the fundamental laws of physics to unprecedented levels in order to better understand the world we live in. The proton collisions will momentarily reproduce conditions that existed shortly after the beginning of time. Scientists will be able to look for the origin of mass, extra dimensions of space, microscopic black holes and evidence of dark matter candidates. The University of Victoria team spent over ten years designing and building many of the components included in the ATLAS detector.

Eleven Canadian institutions partake in the ATLAS experiment, but UVic's accomplishments stand out. The Canadian ATLAS adventure was initiated here

at UVic in 1992 in the Department of Physics and Astronomy under the leadership of Dr. Michel Lefebvre, who greatly benefited from the legacy and foresight of UVic particle physics colleagues Dr. Alan Astbury, former Director of TRIUMF, and Dr. Richard Keeler, UVic's current Associate Vice-President of Research, who both founded the UVic Particle Physics group in 1983. "Without the support of Alan, Richard, and TRIUMF, the birth of the ATLAS adventure in 1992 in Canada would not have been possible" says Lefebvre. The group has been growing, and now also includes Dr. Justin Albert, Dr. Robert Kowalewski, Dr. Robert McPherson, and Dr. Randy Sobie. Both McPherson and Sobie are Institute of Particle Physics Scientists. Dr. Robert McPherson, who has led the UVic-ATLAS group since 2003, was elected Spokesperson of the whole ATLAS-Canada Collaboration in 2007.

The UVic group is currently composed of over 25 scientists, including students, research associates, technicians, computer experts, engineers, and physics professors. Since 1992, the ATLAS project at UVic has provided unique opportunities for the training of highly qualified personnel. Says Lefebvre, "We are particularly proud of the achievements and success of our former members, and many now hold permanent positions in top institutions in Canada and abroad."



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ATLAS beam pipe installation at CERN  
Photo credit: copyright CERN

## Inspired to Inspire: UVic Citizen Set to Retire

*An Interview with Dr. Reg Mitchell by Bryan Koivisto*

When asked what Reg Mitchell would have become if not a chemist, Reg said that he would have liked to have been an actor, or host of his own TV series. He then suggested that being a university professor was similar in that *"lecturers are merely actors that write their own script."* His career thus far demonstrates that he has been an actor in a very well written script.

Reg Mitchell was raised in Brixton, UK. His mother, who he admits has had the biggest influence in his life, encouraged him to do well in school and become an accountant or teacher. In his early teenage years though his interest shifted to chemistry, due to two influences. Simultaneously, Reg was inspired by exciting demonstrations from his chemistry teacher (many of which he still uses today) and the gift of a chemistry set from his neighbour. After a few smells, colour changes and explosions Reg felt that chemistry was the *"more exciting"* route and began his journey to acquire his Ph.D. from Cambridge in 1968.

After doing postdoctoral work in Oregon, the ocean and mountains helped convince Reg that the *"west was the best."* While on a brief industrial stint in the UK, Reg blanketed western Canada and US with resumes. Conveniently, UVic had an opening and Reg joined the UVic department of chemistry in 1972.

In 1974 UVic hosted an open house, which included a chemistry magic show. Being a young, enthusiastic faculty member Reg decided to paint his face for the children. After what was an exhausting show, he recalls saying *"Christ, I am zonked out..."* At that point the name stuck, and the Dr. Zonk legend was born.

Reg claims that his *"ability to speak to people about anything"* is his greatest strength. He also recognizes that at times he may be guilty of *"speaking too much."* But despite this dichotomy, Reg has always used his ability to communicate science to become a better UVic citizen. Having had a productive research career studying aromaticity, he has received many accolades for teaching, and is the longest serving member on the UVic senate.



Dr. Reg Mitchell as Dr. Zonk. Photo credit: D. Nethercott

His Dr. Zonk alter ego has also received enormous attention for his contribution to the community, and inspired generations of young people. Dr. Reg Mitchell has always made university service a top priority, so it was a bit of a surprise when he said that he is looking forward to his retirement. He feels that it is time for the younger faculty to continue where he has left off. Despite his continued success in the many aspects of his career he welcomes retirement and he looks forward to traveling, reading fiction, and spending time with the ones he loves, as he recognizes that because of his commitment to the university, perhaps his family has *"suffered most."*

Reg wishes his colleagues well, and hopes that the collegiality that he has enjoyed in his career will carry through for current and future chemistry faculty. When asked what improvements could still be made to the university, Reg believes that more weight and emphasis should be made on scholarly contributions to the university. Faculty should also be encouraged to continue engaging the public and be good university citizens.

## CHEMISTRY NEWS

The Department of Chemistry welcomes new faculty member Dr. David Steurman who specializes in molecular electronics and spin electronics, with the primary goal of exploring their confluence. Dr. Steurman's teaching interests revolve around physical and materials chemistry. He comes to UVic from the California Nanosystems Institute at the University of California, Santa Barbara where he served as a Post-Doctoral Fellow.

This year's Canadian Society for Chemistry Clara Benson Award winner is the Department of Chemistry's own Dr. Cornelia Bohne. The Clara Benson Award provides recognition of a distinguished contribution to chemistry by a woman while working in Canada. Dr. Bohne's research program looks at understanding supramolecular dynamics, but it was her strides in developing specialized techniques in her lab that led to a deeper understanding in this field and garnered her national recognition.

Dr. Frank van Veggel, Canada Research Chair in Supramolecular Photonic Materials, recently received a grant for \$240,000 from NSERC (National Sciences & Engineering Research Council of Canada) for the nanotechnology program in quantum information processing.

## Let's Talk Science *By Andrea Coulter*

This year, in partnership with the Victoria Native Friendship Centre and the Kwakiutl people of the Fort Rupert Nation, the Office of Indigenous Affairs developed and delivered an Outdoor Experiential Learning Camp for 12 aboriginal youth aged 14 to 18. As the coordinator of Let's Talk Science Partnership Program at UVic, I was invited to participate in the camp as a leader. Let's Talk Science is a charitable organization dedicated to improving science literacy in Canada through fun hands-on science curriculum in classrooms and at community events.

The Fort Rupert Nation is a coastal community, and one of the first activities that came to mind was some fun in the intertidal zone. Fortunately, Tom Child, a M.Sc. candidate in the School of Environmental Studies who is looking at pollution in traditional aboriginal marine food sources, was also participating in the camp as a leader. Tom and I spent our first morning in Port Hardy along the shore, looking at the flora and fauna of the intertidal zone with the campers, introducing them to biological diversity and how it relates to the ever-changing environment created by the tides. The campers also learned about taxonomy and traditional uses of intertidal life as food. That afternoon, we paddled over to Wadzulis (Deer Island) in traditional canoes.

We continued the theme of fun learning on the Island, where camp leaders taught the youth a geocaching game that included a cache at a culturally modified tree and computer science algorithms without the use of electricity using a game of *"log sort"* on the beach.

I know the youth came back excited at all they had seen and done. Proof of this was a comment I heard when passing the kids during a camp activity: *"Cool! I learned something new today!"*

Students of Let's Talk Science discover an intertidal zone  
Photo credit: A. Coulter



## Exponential Growth in MATHEMATICS & STATISTICS



Dr. Slim Ibrahim  
Photo credit: K. Hollefreund

The Department of Mathematics & Statistics welcomes new Faculty member, Dr. Slim Ibrahim. Dr. Ibrahim studies partial differential equations and analysis with particular interest in the theory of dispersive equations and fluid dynamics, harmonic analysis, regularity of functions, and local and micro-local analysis. Dr. Ibrahim joins the department from a term faculty position at Arizona State University and prior to that, McMaster University, where he was a Canada Research Chair Post-Doctoral Fellow.

## BIOCHEMISTRY & MICROBIOLOGY: Leadership in Health Research at the University of Victoria

One of the untold stories of the Faculty of Science is our national prominence in biomedical research. The subjects of microbiology and biochemistry lie at the heart of biomedical studies and the Department of Biochemistry and Microbiology—despite its relatively small size—has established an enviable reputation in both. The department has the mission of “*leading in research on the molecular basis of life and applying discoveries to the improvement of human health and the environment.*”

Infectious diseases and cancer are two key research foci in the department. How do bacteria initiate infections and evade cellular defenses, and what are the molecular and cellular events that are the basis of human cancers? We tackle these questions by focusing on specific molecules and their interactions; both are key in developing new diagnostic approaches and treatments. Caroline Cameron and Alisdair Boraston, both Canada Research Chairs, are rising stars in the field. Cameron's work with the bacteria that cause syphilis is gaining national attention. Al Boraston is a structural biologist who uses x-ray techniques to determine the atomic structure of proteins, work that is leading to new targets for antibiotics. Marty Boulanger studies how the protozoan parasite *Toxoplasma gondii* attaches to and invades cells, while Fran Nano is a world leader in studies of Francisella, another pathogenic bacterium for which there is an urgent need for diagnostics and treatments. Terry Pearson is internationally known for his work on the molecular biology of African sleeping sickness, as is Christoph Borchers, the director of the University of Victoria Genome BC Proteomics Facility, who applies mass spectrometry to improve our ability to make early diagnoses of diseases. Chris Upton, a world leader in the analysis of viral genomes, studies the molecular pathogenesis of poxviruses, while Perry Howard explores the role of cellular signaling in cancer development.

The department continues to forge strong ties with external research agencies. We work closely with the BC Cancer Agency's Trev & Joyce Deeley Research Centre, where Adjunct Professors Brad Nelson, Peter Watson, John Webb, and Julian Lum have established excellent, nationally funded programs in immune responses to cancer. And on campus we collaborate increasingly with scholars in the departments of Chemistry and Biology, bringing multidisciplinary to bear on some of the most trying problems in human health.

## ALUMNI PROFILE Biochemistry, Denise DeLeeBeeck



Denise DeLeeBeeck (BSc '71) worked in seafood research for 17 years, then developed and delivered industry training at BCIT in fisheries technology and food safety. Denise is currently making a career change to the humanitarian field and is excited about this new direction. This year she took a fundraising course, then volunteered at a children's home in Kenya for a month. She's still processing all the experiences of working with underprivileged children in Africa. Denise has two daughters, Nyssa and Jenna, and is married to Ray. She is a proud “Baba” to twin grandsons who are just over a year old.

Biochemistry Grad Denise DeLeeBeeck, BSc '71 Photo credit: Courtesy of the DeLeeBeeck family

## In Memoriam Dr. John L. Climenhaga



Dr. John L. Climenhaga  
Photo Credit: C. Main/UVic  
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The recent passing of Dr. John L. Climenhaga saddened the university community. Dr. Climenhaga's contributions to the University of Victoria were numerous. His career spanned the metamorphosis of the original Victoria College, where he began as a teacher in 1949, to Victoria's own university in 1963. Dr. Climenhaga served as the first Chair of the Department of Physics, and subsequently became the Dean of Arts and Sciences until 1972 when he returned to research and teaching. His research included studying the abundance ratio of carbon 12 and carbon 13 on cool carbon stars and the blanketing effects and micro-turbulence of super-giant stars.

Dr. Climenhaga was integral in advocating the creation of the Astronomy Department, a vision that became a reality in 1965 when Astronomy was added as a partner to the Department of Physics. He played a key role in ensuring UVic's involvement with TRIUMF, the Tri-University Meson Facility, Canada's National

Laboratory for Particle and Nuclear Physics on Point Grey in Vancouver.

His contributions at UVic were recognized in 1982 when the observatory on the roof of the Elliott Building—a structure in the original building plans that he championed—was named the Climenhaga Observatory in his honour. This was also the time that Dr. Climenhaga retired, only to find himself continuing to teach as a Professor Emeritus with the Department.

In 1987, on his 70th birthday, Dr. Climenhaga was further honoured when the International Astrophysics Union named an asteroid orbiting the sun between Mars and Jupiter the name of Minor Planet 3034 Climenhaga. The University of Victoria granted him an Honourary Degree of Doctor of Science in 1996. John L. Climenhaga will be remembered as a champion of the university, a man of vision, and a pivotal member of the UVic community of scholars.



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