Nursing professor wins national teaching award

by Ken Faris

University of Victoria school of nursing professor and associate dean of graduate studies Dr. Gweneth Doane has been named a recipient of Canada’s top university teaching honour—the 2006 3M Teaching Fellowship Award.

Dr. Doane is lauded by her students and colleagues alike for the creative ways she connects research and teaching, especially in the area of ethical practice in nursing.

“I’ve had the privilege of working in a university that values collaborative teaching and research,” says Doane. “I have been joined by a great many others in my efforts to enhance educational experiences for students in higher education. I truly appreciate the support of my students and associates in nominating me for this award, but it’s through their collaboration that my efforts have been successful.”

Doane adds the 3M award to a list of honours, including UVic’s Alumni Award for Excellence in Teaching in 2004, the Award for Teaching Excellence in the Faculty of Human and Social Development in 2000, and the inaugural award for teaching excellence from the Canadian Association of Schools of Nursing in 2000.

Doane’s accomplishments include co-designing the overall nursing curriculum for 10 B.C. post-secondary institutions, undertaking educational research initiatives, consulting widely on educational technologies, co-developing interdisciplinary courses, and serving in a number of administrative positions at UVic.

An early adopter of educational technology, Doane has contributed to the development of courses throughout the school of nursing. She also helped to establish UVic’s family health centre, a multidisciplinary centre for family research, family services and educational opportunities for students studying for degrees in family-related fields.

Doane joins nine other Canadian university educators in receiving this year’s 3M awards. Sponsored by 3M Canada and the Society for Teaching and Learning in Higher Education, up to 10 fellowships are awarded nationally each year to recognize teaching excellence and educational leadership.

Past recipients of 3M fellowships at UVic include vice-president academic Jamie Cassels, graduate studies dean Aaron Devor, David Berry (chemistry), Tom Cleary (English) and Andy Faragher (professor emeritus).

Bighouse ceremony honours indigenous grads

“The evening was one of the highest moments in my life,” says Chantelle Syerete, a new graduate from the University of Victoria’s school of child and youth care.

On June 9, 15 graduates from the faculties of law, education, human and social development, social sciences and fine arts gathered at the Coast Salish Bighouse in Esquimalt to celebrate their achievements with family, friends and faculty.

The students were individually presented to the audience by a faculty member, who spoke personally about each student and his or her journey toward their goal. Students responded by sharing their personal experiences and challenges.

The faculty of human and social development, on behalf of the university, has been honouring indigenous graduates with a recognition ceremony since 1998.

University names new VP finance and operations

The University of Victoria has a new vice-president. Gayle Gorrill, currently associate vice-president administration at the University of Calgary, will join the leadership team at UVic as vice-president finance and operations on Sept. 1.

Gorrill, chosen after a national search, comes to UVic with a wealth of experience in budget planning, financial oversight of capital projects and the renewal of major administrative systems. She’ll arrive at UVic enters one of the most significant building booms in its history and the university implements a multi-year project to replace its stand-alone administrative systems with unified, state-of-the-art information technology.

UVic’s annual revenues now total $470 million, including external research funding that has more than doubled to $60 million in the past five years.

“Gayle is coming to UVic at an exciting and important point in our history,” says UVic President David Turpin. “Her leadership skills, combined with the significant opportunities in front of us, mean that Gayle will be playing a major role in taking UVic to a new level nationally and internationally.”

Gorrill’s references describe her as a “high-performing individual,” “natural leader” and “very strategic thinker,” with “wonderful interpersonal skills” and a “collegial” and “very consultative leadership style.”

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As associate vice-president at Calgary since 2003, Gorrill has primary responsibility for the uni-
The University of Victoria has been rated in its new CFI report as "innovative" by Research Infosource Inc. Canada, publishers of Canada’s Top 50 research universities list and Canada’s top 100 corporate R&D spenders list. The company’s Canadian University Research Publications (CUP) report analysed the nation’s publication outputs from 1999 to 2004 in the context of the three university categories (medical/doctoral, comprehensive, undergraduate).

Using a new indicator developed for the report called "publication effectiveness”—that is, a measure of the cost of research at each university against its impact/quality—Research Infosource designates nine Canadian universities as leaders in "publication effectiveness." UVic places third in the comprehensive category, following SFU and Concordia.

"The report’s findings confirm that UVic is a leader in university research and that we are giving maximum value back to those who support our research," says Dr. Martin Taylor, vice-president research. UVic ranks consistently among the top comprehensive universities in Canada. Its researchers were awarded more than $80 million in outside grants and contracts in 2005-06. It leads all Canadian comprehensive universities in medical and science grants per faculty member.

For more information about UVic’s "We’re Going Places" research campaign visit www.uvic.ca/research. Details on the CUP report are available at www.researchinfosource.com/uvicPub.

CFL grants fund six new UVic researchers

New drugs to combat disease, more effective online learning, new wireless technologies, improved resource management, and a greater understanding of chemical and physical processes in the oceans are expected to emerge in the home entertainment, education, health care, environmental monitoring and rural development fields. It’s anticipated that 65 per cent of businesses will use some form of wireless networking within the next three years to improve productivity.

Roberta Hamme (SEOS) will use a $2,000,000 grant to establish a lab for measuring dissolved gases in the ocean. Her work will help to answer critical questions about the physical and biological processes that control carbon distribution in the ocean, and ultimately help us better predict future climate changes.

SEE CFL GRANTS P.8

New dean takes helm of "refreshed" education faculty

The faculty of education has a familiar face in its new Dean, Dr. Ted Riecken, a 17-year veteran of the faculty, took over from outgoing dean Budd Hall on July 1. Riecken says he has looked forward to moving the education faculty forward on some well-established tracks laid by his predecessor, including a recent refresh within the faculty.

"Budd told me that he had just completed his 30th new hire, which means almost half of our faculty members are new," says Riecken. "I’m looking forward to welcoming them into the UVic community and building on their ideas and energy."

A member of the department of curriculum and instruction, Riecken obtained his doctorate from UBC in 1989. While at UVic, he has served as associate dean of education for four years, as well as co-director of the interdisciplinary centre for youth research, and retained the world’s brightest re-

searchers.

Lin Cai (electrical and computer engineering) will use $1,160,000 to set up an advanced laboratory for research projects in multimedia wireless networking. Potential applications are expected to emerge in the home entertainment, education, health care, environmental monitoring and rural development fields. It’s anticipated that 65 per cent of businesses will use some form of wireless networking within the next three years to improve productivity.

SEE CFL GRANTS P.8

U Vic research packs a wallop

The support of her peers and pro-
fessors has helped a University of Victoria law student garner Canada’s premier science and humanities doctorate award—the Trudea Scholarship.

Dawnis Kennedy is one of 15 Canadian students to be named a 2006 Trudea Scholar. Created in 2003, the program awards the largest scholarships in Canada for doctoral studies in the social sciences and hu-

manities. Scholarships are worth up to $150,000 over three or four years and allow winners to address major societal issues by interacting with prominent thinkers and leaders.

"I feel tremendously supported at UVic," says Kennedy, an Anishinabe woman who is currently completing a master of laws degree at UVic. "It’s really important that indigenous students find their own approach to material. My supervisors have been amazing. I’ve been able to develop my own voice and I think this may be one of the reasons I have received this scholarship."

Kennedy was chosen for the award based on her good grades, letters of sponsorship from her prof-
fessors, and her contributions to the community. She often travels home to the Nuu-chah-nulth First Nation in Minhsaht so that she can participate in Anishinabe culture and ceremonies.

Kennedy has also been involved in aboriginal legal services in To-
ronto and with the indigenous law students’ associations at UVic and University of Toronto. Once she finishes her studies at UVic this fall, Kennedy will begin the PhD program in juridical science at the University of Toronto.

"I wanted to go into law because my interest and my family’s interest were very much about revitalizing our com-
munity and culture," says Kennedy. "Canadian law has had a huge impact upon our communities. I wanted to think about ways that Canadian law could relate more respectfully to indig-

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zation movement that is happening in indigenous communities."

"Dawnis’ success reflects the outstanding quality of students and programs at UVic, and celebrates the university’s commitment to strengthening its unique relationships with First Nations communi-

ties," says Dr. Katy Marron, acting vice-president academic.

UVic alumna Lisa Helps (hist-
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Law student wins top Canadian scholarship

by Maria Littini

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The house that Jack built

Retiring vice-president leaves his mark on UVic's financial and capital growth

What does it take to make a great city for seniors? That's the issue being examined by the University of Victoria's centre on aging, the District of Saanich, and the B.C. Ministry of Health.

They're taking part in the World Health Organization's Global Age-Friendly Cities project—an international study on seniors' quality of life. The WHO has asked the 13 participating international communities to look at issues related to health, security, independence, and participation in the community.

Things such as leisure programs, accessibility to public and private spaces, affordable and accessible seniors' housing and employment opportunities will be examined. Saanich is one of only two cities in Canada to take part in the project. Saanich has a higher concentration of seniors compared to other parts of the country. According to the Union of B.C. Municipalities, by 2010 one in five Saanich residents will be over 65 years of age.

The other Canadian community being studied is Portage la Prairie. The project also looks at locations in Argentina, Australia, Brazil, Germany, India, Mexico, Lebanon, Costa Rica, Great Britain and the U.S.

Dr. Elaine Gallagher (centre on aging) is leading the study on Saanich. It begins in March and involves eight focus groups composed of seniors, caregivers and community leaders discussing a variety of issues that affect seniors.

"Cities and municipalities need to get ready for the fact that baby-boomers are moving into retirement at an unprecedented pace. After all, a city that is safe for seniors is safer for everybody," Gallagher's results will help the WHO develop guidelines for cities to use worldwide and will be released on the 2007 international day of older persons (Oct. 1).

The BC Ministry of Health has provided $20,000 to cover the cost of the study. Other B.C. partners include the Union of B.C. Municipalities, the B.C. Recreation and Parks Association, and B.C. 2010 Legacies Now.

Don Wright, music educator, composer philanthropist and Canada's 'jingle king', died June 27. He was 97. He established more than 34 scholarships across the country, supported many charitable causes, and continued to inspire music education through his valuable work. In 2001 he was awarded an honorary degree by UVic. In 2004 he donated $1 million to music education at UVic to establish the Don Wright Music Education Wing. Says Dr. Budd Hall, former dean of education: "We have learned of the passing of Don Wright with great sadness—the sadness of losing a close friend, an inspirational musician and a man with a generosity and concern for others that is second to none. His support of music education at our university leaves a permanent reminder of his great belief in the role of music and the capacity of the young to change the world for the better."

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In memoriam

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The Fall 2006 Continuing Studies Calendar is available now on our website, www.continuingstudies.uvic.ca

Look for a printed copy of our fall calendar on campus and at libraries and recreation centres beginning on August 1.

Looking for more out of life?

The Ring July/August 2006
Private sector adds $1.2 million to aboriginal chair

by Maria Lironi

During the 2006 federal election, the Liberal Party promised to invest $1.2 million in a new professorship to develop a research and education center to advance aboriginal economic development on Canada’s East Coast. The professorship, to be installed in the Strait of Georgia near Vancouver, is now under development.

The Pacific Ocean is now just a mouse click away. The Victoria Experimental Network Under the Sea (VENUS) facility has opened the data portal to its information management and archive system.

The portal—hosted on the new VENUS website at www.venus.uvic.ca—gives scientists and the general public access to a constantly expanding “warehouse” of images, sounds and live data from the ocean floor.

“It is very important and exciting development providing a unique window for researchers and the public on the underwater world, about which we have so much still to learn,” said Dr. Martin Taylor, UVic’s vice-president research, at a technical briefing for the news media on June 22.

The $10.3-million VENUS facility offers the world’s first interactive, real-time portal to the ocean. Its underwater network of fibre optic cables and instruments, which is connected to the Internet, lets us all “enter” the ocean whenever we wish, and allows scientists to operate their instruments and download data on-line, day or night, in real time.

The 5-km network of fibre optic cables and instruments that makes up the first leg of VENUS was installed in Saanich Inlet in February. Information has been streaming in since then. A second, 40-km leg will be installed in the Strait of Georgia near Vancouver later this year.

At the heart of VENUS is a centralized data management and archive system that offers unrestricted access to long-term ocean observations. It is a very advanced software “structure” that was developed at UVic and sets new standards in data capture, access and delivery,” says VENUS project director and marine biologist Dr. Yvonne Tunnicliffe.

The four key features of the data management and archive system are: data acquisition and storage, easy user access to data, observation monitoring, and the control of instruments by VENUS scientists.

This is a remarkable resource and represents a year of hard work by a 13-member team,” says Tunnicliffe.

“The information we see today on the VENUS website is just the tip of the iceberg,” says Benoît Pirenne, director of the database team. “Behind the scenes, there is an extensive software and hardware infrastructure designed to collect data from the various instruments and store them for 20 or more years.”

VENUS instruments collect several gigabytes of information every 24 hours. In its four-and-a-half months of operation, VENUS has already archived more than 35 million measurements of acoustic and visual data.

That information—and new real-time data—is now available to the world.

The data management system is constantly evolving. In the near future, “software agents” will work on behalf of VENUS scientists, monitoring incoming data and alerting them by e-mail or cell phone if an unusual event or trend occurs that warrants immediate attention.

Over its 20-year lifespan, VENUS will support studies on topics such as: long-term ocean changes; tides, currents and mixing; fish and marine mammal movements; seafloor community ecology; underwater noise pollution; sediment and slope dynamics; and plankton behaviour.

VENUS is funded by the Canada Foundation for Innovation, the British Columbia Knowledge Development Fund, and other contributions from federal agencies, industry and sponsors. Its data management and storage system is shared with the unique window for researchers and the public on the underwater world, about which we have so much still to learn,” said Dr. Martin Taylor, UVic’s vice-president research, at a technical briefing for the news media on June 22.

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New website breaks down knowledge borders

warnings: biking to work is good for you!

As Chow is an eye-guy, you can’t help noticing that he wears glasses. But these are for nearsightedness, he says, and not the reason he has devoted a major chunk of his career to studying eyes and the complex processes involved in seeing. That scientific journey began long ago when Chow was growing up in southern Ontario. While not with his buddies playing road hockey (and losing teeth), Chow was out collecting bugs and beetles to peer at under his microscope. While friends built model cars, Chow carefully constructed a model of the human ear. “I’ve always been interested in understanding how the body is put together, the mechanisms involved, how genes interact with other genes in developing cells. It’s quite fantastic and overwhelmingly complex,” says Chow. At university, he was the student who volunteered to stay behind at the end of class to wash beakers and dirty dishes so that he would be allowed to assist with research projects.

Chow’s unbridled enthusiasm paid dividends. While studying in a developmental genetics lab in New York City, he was a key player in the major discovery of a “master regulator” gene for eye formation. Chow made the remarkable observation that this gene, alone, had the profound ability to generate third, fourth and even fifth eyes in tadpoles. At Toronto’s Hospital for Sick Children Chow was working with a geneticist investigating the causes of microphthalmia, a condition that leads to children having extremely small eyes, when he pinpointed the role of a specific gene, now known as “Vsx1,” in retinal development. This breakthrough serves as the basis for his current research.

Along with his early success, Chow is realistic. “Science can move at a snail’s pace one moment, and then switch to a sprint in the next,” he says. “For every moment of discovery there is normally a long process of constant troubleshooting and experiments that don’t work.” Regardless of how confounding the data appears, there is no such thing as a wrong path, he says. Chow is glad that his own path has led him to UVic because he’s enjoying being “at a research-based university with a strong science focus.”

Chow is collaborating with researchers in different parts of the world who are working in similar areas. Currently, he has teamed up with scientists in the St. Louis, New York and Britain. “This is the nature of science,” he says. “We’re all playing a role in a global effort to push the boundaries of our knowledge. It’s collaborative. Making a living by being part of this effort is really a great privilege.”

For more information on Chow’s work, visit web.uvic.ca/biology/People/chow/chow.htm or www.chairs.gc.ca/web/chairholders/index_e.asp.
New VP continued from p.1

versity’s budget, the budget planning process and financial services. She is also providing leadership on a major administration systems renewal project, human resource matters, and an initiative to improve administrative support and reporting systems for university researchers. From 1999 to 2003, she filled executive positions in finance for the Calgary Health Region, including responsibility for the planning process for a $1 billion annual budget, financial oversight for a major expansion of hospitals in the city and the exploration of partnership opportunities with external agencies.

Gorrill graduated with a bachelor of business administration from the University of Regina in 1982 and received her chartered accountant designation in 1985.

During July and August, Kristi Simpson, associate vice-president financial planning and operations, is serving as acting vice-president. The vice-president finance and operations is responsible for the budget office, computing and systems services, campus security, emergency planning, facilities management, financial services, human resources, internal audit and campus planning.

Paying it forward

For 10-year-old Marites Frazer, second from right, birthdays are a time for giving, not receiving. During a visit to UVic earlier this year she was so inspired by the work of the University of Victoria Assistive Technology Team (UVATT) that she asked her friends not to give her gifts on her birthday, but to give her money for UVATT in May. She sent a $150 donation to the team, which develops devices and technologies for people with disabilities. “I was very interested in the help that you give people,” says Frazer, who brought her classmates along on a visit to the UVATT lab last month. The class later sent the team a book containing drawings and thank-you notes. “All of us were incredibly touched when we received the letter and donation from Marites,” says UVATT director Nigel Livingston. “It was lovely to have the opportunity to thank them in person.” Pictured with Frazer are (l-r) UVATT research scientist Leo Spalteholz and classmates Julia Almeida and Nadia Abu.
How “protected” are B.C.’s Marine Protected Areas?

There are 130 marine protected areas (MPAs) on Canada’s Pacific coast but they may not be effectively shielding key marine ecosystems, says Dr. Rosalie Canessa, a University of Victoria geographer.

Canessa, a computer mapping specialist who studies how human activity affects the ocean environment, was one of the contributors to the B.C. Coastal Environment Project, the results of which were released last month by the B.C. Ministry of Environment.

For the project, Canessa analyzed information on the status of MPAs on the coast — where they are, how big they are, what they’re supposed to be protecting, and how well they’re succeeding. Her analysis shows a mix of different types of MPAs established by several federal and provincial agencies, each with their own mandate.

“A lot of people think that MPAs are areas where no human activity can happen, but many are subject to processes from within, such as harvesting and recreation, and threats from outside, such as forestry,” she says. Canada’s Pacific coast MPAs are generally very small and only cover 0.5 per cent of the marine environment (defined as beyond intertidal out to the continental shelf), compared to 12.5 per cent of coastal land. Many are add-ons to protected areas on land. Most are provincially designated, but the federal government controls some activities in them, such as fishing.

“We need to monitor the marine ecosystems in MPAs so we can better assess the threats to them,” she says. “And there needs to be greater federal-provincial coordination so that their individual mandates together create more effective MPAs.”

by Pete Lewis

The department of athletics and recreation and the school of physical education have embarked on a comprehensive facility assessment review of all athletic, recreation and educational facilities. The review will look at the internal needs of the two departments for varsity sports, student and university community recreation, and for teaching and research.

Supported by the university administration, the purpose of the facility review is to gain a thorough needs and demand assessment for all athletic and recreation facilities with students, other campus users and the Vikes varsity program, and to determine the space requirements for the school of physical education.

“Th is is an extremely important project for us,” says Clint Hamilton, director of athletics and recreration. “Through this process we will develop a sustainable business and operational plan for our athletic and recreation facilities for the next 20 to 30 years.”

The process will consult with the many alumni, sport and school organizations that currently use the university facilities, along with neighbouring communities. Currently, local sport organizations, community and charity groups access the facilities for more than 200 hours of use each week.

The facilities include the McKinnon Building (built in 1976), the Jan H. Stewart Complex (built mid-60s and acquired in 1992) Centennial Stadium (built in 1967), Wallace Field, a water-based artificial field hockey pitch (nearing completion), a full-size artificial turf playing field, the Vikes field (acquired in 2004), a disc golf course, and a sailing compound located at Gyro Park in Cadboro Bay. The Vikes varsity rowing teams share the boathouse at Elk Lake as their training base and the swim teams train at Saanich Commonwealth Place.

2006/07 Ring Schedule

Calendar items should be sent by 4 p.m. on the copy deadline date shown below to UVic Communications (Sedgewick C140, fax 721-6951, e-mail uviccomm@uvic.ca) or entered into the online calendar (www.uvic.ca/events). For more information call 721-7036.

Publication Date Copy Deadline
Th ursday, September 7 . . . . . . . . . . . . . . . . . . . . . . . . . . Sunday, August 27
Th ursday, September 14 . . . . . . . . . . . . . . . . . . . . . . . . . . Sunday, August 27
Th ursday, September 21 . . . . . . . . . . . . . . . . . . . . . . . . . . Sunday, August 27
Th ursday, October 2 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Sunday, August 27
Th ursday, October 9 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Sunday, August 27
Th ursday, October 16 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Sunday, August 27
Th ursday, November 4 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Sunday, August 27
Th ursday, November 11 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Sunday, August 27
Th ursday, November 18 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Sunday, August 27
F riday, January 5, 2007 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Sunday, August 27
F riday, January 12, 2007 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Sunday, August 27
F riday, January 19, 2007 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Sunday, August 27
F riday, January 26, 2007 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Sunday, August 27
F riday, February 2, 2007 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Sunday, August 27
F riday, February 9, 2007 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Sunday, August 27
F riday, February 16, 2007 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Sunday, August 27
F riday, February 23, 2007 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Sunday, August 27
F riday, March 1, 2007 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Sunday, August 27
F riday, March 8, 2007 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Sunday, August 27
F riday, March 15, 2007 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Sunday, August 27
F riday, March 22, 2007 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Sunday, August 27
F riday, March 29, 2007 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Sunday, August 27
F riday, April 5, 2007 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Sunday, August 27
F riday, April 12, 2007 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Sunday, August 27
F riday, April 19, 2007 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Sunday, August 27
F riday, April 26, 2007 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Sunday, August 27
F riday, May 3, 2007 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Sunday, August 27
F riday, May 10, 2007 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Sunday, August 27
F riday, May 17, 2007 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Sunday, August 27
F riday, May 24, 2007 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Sunday, August 27
F riday, May 31, 2007 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Sunday, August 27
F riday, June 7, 2007 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Sunday, August 27
F riday, June 21, 2007 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Sunday, August 27
F riday, June 28, 2007 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Sunday, August 27
F riday, July 12, 2007 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Sunday, August 27

Indigenous grads continued from p.1

and culture and celebrate our values,” she said.

More than 200 guests were treated to an impressive cultural ceremony which included a traditional feast and ceremonial dances. Many attendees wore traditional button blankets, cedar hats, ornate caps, vests and skirts. Graduates thanked the university for recognizing them in a traditional way and for giving them the opportunity to publicly thank family, friends, instructors and staff.

Arthur Vickers, who received an honorary degree from UVic on June 7, was presented with a native blanket from the school of social work and recognized for his many contributions and support. Vickers is a West Coast native artist who combines the rich traditions of the Heiltsuk and Tsimshian people with highly original artistic vision.

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UVIC BOOKSTORE
In invading bullfrogspose new threat to native frogs

by Beth Haysom

The sonorous night-time bellowing of North American bullfrogs is sounding an alarm to two University of Victoria biologists, who fear that the invasive giants may be spreading a deadly disease to native frog species.

A recent study published in the international journal *Biology Letters* has found that non-native bullfrogs are frequent carriers of the fungus *Batrachochytrium dendrobatidis*, which is lethal to many amphibians. The fungus, endemic to Africa, was introduced into the world via the worldwide distribution in the mid-20th century of African clawed frogs, which were used for pregnancy tests. Although the bullfrogs are unaffected by the fungus, it appears to be rapidly wiping out many other amphibians in parts of the world.

“Serious declines have been documented in North, South, and Central America, Europe, and Australia and it’s happening fast,” says Dr. Purnima Govindarajulu, a co-author of the paper. She’s been researching the bullfrog invaders on Vancouver Island since 1997 for her PhD and post-doctoral studies at UVic.

Govindarajulu and UVic biologist Dr. Brad Anholt have applied for funding to study the causes of the disease and develop measures for preventing its spread.

“We urgently need to find out what’s happening so that we can try and do something before it’s too late,” says Govindarajulu. “Vancouver Island has large populations of bullfrogs that are showing significantly high levels of the fungal infection. Some of the native frogs are also testing positive for the fungus but we’re not yet aware of any catastrophic declines. The time to understand the disease and prevent a crisis, if possible, is now.”

The bullfrogs are an invasive species already considered ecological bad news because they compete with or prey on smaller native frog species. Govindarajulu has been mapping the spread of bullfrogs and testing them for the fungus in collaboration with provincial and federal biologists, and with an international team at the London Zoological Society and the Imperial College London. Some of the findings in the *Biology Letters* paper are based on data from Vancouver Island.

Bullfrogs were originally brought to B.C. in the 1930s and 1940s to be farmed for frogs’ legs. Up to 20 cm long (not including the legs) and weighing as much as three-quarters of a kilogram, bullfrogs are the largest frogs in North America. They’re now well-established in ponds and lakes in southwestern B.C.

Govindarajulu hopes that public awareness will support efforts to contain bullfrogs and the spread of the fungus. People who see or hear bullfrogs can report their location to Frogwatch at www.env.gov.ca/biology_letters/index.htm, a provincial program that is monitoring the bullfrog situation.

Biologists advise people not to move any frogs or other aquatic organisms from one pond to another, as this will only hasten the spread of the fungus and other diseases, putting other wildlife at risk.

“Amphibians are a crucial link between aquatic and terrestrial food webs,” says Govindarajulu. “Many of them are already on endangered species lists. This [disease] adds another twist to their sad story.”

CFI grants continued from p.2

A $539,306 grant to Robert Ingham (biology) will be used to establish a lab for the study of the biochemical signals initiated within cells in response to environmental cues, and how these signals affect cellular function—a process known as signal transduction. The work will help pharmaceutical and biotechnology companies develop new drugs and treatments for disease.

Valerie Irvine (educational psychology & leadership studies), along with Allyson Hadwin (educational psychology & leadership studies), will use a $270,154 grant to set up a technology integration and experimentation research lab. Irvine studies the use of technology in integrated learning environments and distributed e-learning for health, education, and community-based learning. Hadwin develops and investigates computer-based technologies for promoting and improving strategic learning in solo and collaborative e-learning contexts.

Jody Klymak (SEOS/physics & astronomy) will use a $160,000 grant to acquire a Seascan (towed) system for mapping underwater motions and turbulence in the ocean. Klymak studies the processes that drive mixing in the ocean. The new system will lead to a better understanding of ocean circulation in near-surface and coastal waters, which are highly productive, important to tourism and fisheries, and susceptible to pollution from human activities.

Trishalyn Nelson (geography) will use a $79,926 grant to launch a research centre for spatial data integration. The centre, the only one of its kind in Canada, will develop techniques and software for integrating and analysing underused spatial data collected from a variety of common sources, including global positioning systems (GPS) and GIS-enabled cell phones, depth sounders and mobile weather stations. The new techniques will support many applications, including environmental mapping and monitoring.

The Canada Foundation for Innovation is an independent corporation created by the federal government to strengthen the capacity of universities, colleges, research hospitals and non-profit research institutions to carry out world-class research that benefits Canadians.

Dave Lynn

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Quik Facts

The Spanish flu pandemic of 1918 is considered to be the most deadly viral outbreak in history. An estimated 50 to 100 million people died over the course of several years.

Bacterial diarrhea are often easier to treat than viral infections. One reason for this is that virus mutate faster than bacteria, so drug researchers have to continually design new drugs to combat them.

Although the genome of viruses is quite small—the smallest virus, for example, has 200 genes compared to several thousand in bacteria and 30-50,000 in humans—the function of many viral genes is still poorly understood.

One step ahead

A UVic microbiologist plays a key role in the global battle against deadly viruses

by Shannon McCallum

Hardly a day goes by that we don’t hear of some scary disease in the world, whether it’s smallpox, West Nile virus, SARS or bird flu. All have the potential to threaten public health on a global scale.

University of Victoria microbiologist Dr. Chris Upton is working to combat this threat by designing software and database systems to analyze a particularly dangerous class of viruses—that cause emerging or re-emerging infectious diseases, or that could be used as bioterrorist weapons.

Upton is a virologist specializing in the burgeoning field of bioinformatics, the science of analysing biological data using advanced computer techniques. In collaboration with researchers at the University of Alabama at Birmingham, he and his team are creating a lens of a kind of viral database for use by scientists around the world.

Technically, a virus is a parasite that is not alive. It can only reproduce by infecting its genetic material into the cell of a host, causing the host to reproduce virus proteins instead of its own.

To fight viruses, researchers can create vaccines that stimulate the immune system, or design antiviral drugs that fight the infection once it’s underway. Both methods require an understanding of a virus genome—the sum of all its genetic material.

The genomes of many of these dangerous viruses have been completely sequenced, so for the most part we can predict the proteins with some degree of accuracy,” says Upton. “The question is what do these proteins do? For many of the viruses we know the basics, but not the details.”

The pace of drug design is slowed by this lack of detailed information. Furthermore, the information that is available is not always readily accessible to the average microbiologist.

“Right now, we frequently depend on computer experts to analyse the data,” explains Upton. “The advantage of our system is that it will not only store the information in a central, web-based repository, but it will present it in a way that is intuitive and simple to use. In essence, we’re creating a library and a catalogue system of viral information that hasn’t existed before.”

But Upton and colleagues are more than virus librarians. “We’re adding further information about where genes are on a genome, possible functions, and the proteins that are likely to be produced,” he says. “In this sense, we’re not just putting the information into the library and saying to users ‘Here it is, go find it yourself.’ We’re supplying the tools to help them get around the library.”

Upton’s group also does bioinformatics work with the herpes and smallpox viruses. They also study insect viruses, work that may have applications in the control of forest pests.

“The exciting thing about our work is that it supports a whole series of other research centres that are doing basic research on vaccine or drug design for these types of viruses.”

Upton’s work is funded by the U.S. National Institutes of Health and the National Science and Engineering Research Council of Canada.