

update

A newsletter for the BCIT community.

The mission of BCIT is to provide British Columbians with world-class, job-ready skills for career success.

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coming up

Talking Circle

Wednesday, Nov. 4, and Nov. 18, 1200-1330
"Relationships with People" — A talking circle with Bob George. First Nations cuisine will be provided for the Nov. 4 session. All members of the BCIT community are most welcome to this unique lunchtime session. The subject will be determined by the audience's interest.

Bob George is an Elder Advisor, of the Tsleil-waututh (Burrard) First Nation, who has been working with BCIT's First Nations Programs and Services since 1996.

Please confirm your attendance with Celeste at 432-8474 (email: cspinks) or Brenda at 451-6901 (email: bireland).

Crime and Science Seminar

Saturday, Nov. 28, 0930-1630
Justice Institute of BC
715 McBride Street, New Westminster. The Crime and Science Seminar on Forensic Profiling will examine the mental maps and behaviours of violent offenders, and the techniques used to track down serial criminals.

The Third Annual Crime and Science Seminar is being presented by the JIBC/BCIT Forensic Technology Program and the BCIT Technology Centre. (See "take note" on page 5).

Please call 432-8761 for registration information or visit our Web site at www.bcit.bc.ca/~tc/html/crimescience98.html

Various BCIT Faculty integral to the success of the Tech Centre

Over the past year, the Technology Centre has undertaken a wide variety of applied research projects with industry, and the involvement of faculty has been crucial to the success of many of these initiatives:

Welding instructor, **Brian Finnie**, assembled a welding crew to attach the support structure for an array of Photovoltaic (PV) modules to the building facade of the Technology Centre. Finnie, and Steel Trades instructor **Peter Thomas**, undertook many of the small details required to prepare for, and install, the module. The PV system will be connected to BC Hydro's main utility grid and will provide BC Hydro with solar power.

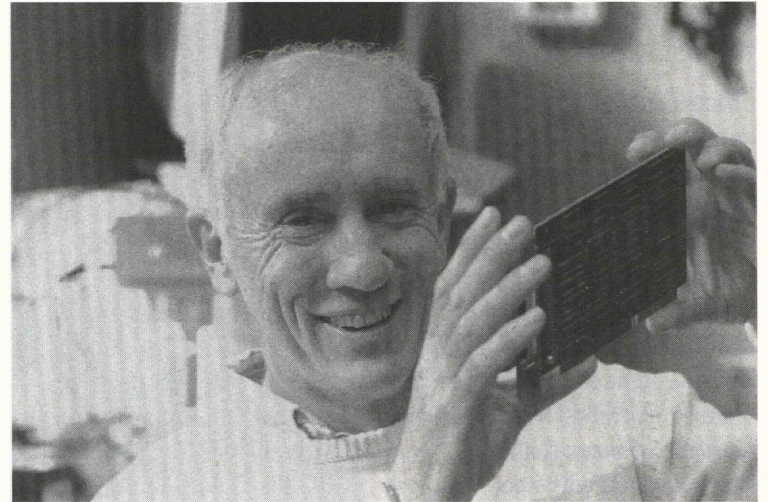
Jeff Melnyk and **Ernst Janzen** from the Machine Shop built the mold for the prototype of a new rotating Tub Drain, used to prevent overflow of water. This new device will allow bathers the option of a higher

water level without having to constantly refill as the tub drains.

Sylvia Raschke, an instructor in Prosthetics and Orthotics, has been a member of the steering committee of the Living Laboratory. She is active in developing projects for the facility and has worked on a number of research proposals for projects involving assistive devices and rehabilitation.

As a member of the Steering Committee for the Living Laboratory, **John Emes**, program head of Basic Health Sciences has been involved in the operation and marketing of this unique research facility located at BCIT's downtown campus. John recently embarked on a four-month leave from his teaching duties to oversee the Technology Centre's Health Applied Research and Development Program while the Director is on leave.

Gordon Theissen of Robotics and Automation, is on leave from his position as an



John Emes is overseeing the Technology Centre's Health Applied R&D program while the director is on leave

assistant instructor in order to work with the Technology Centre on several different projects, including developing an automated dock leveling system for a local manufacturer.

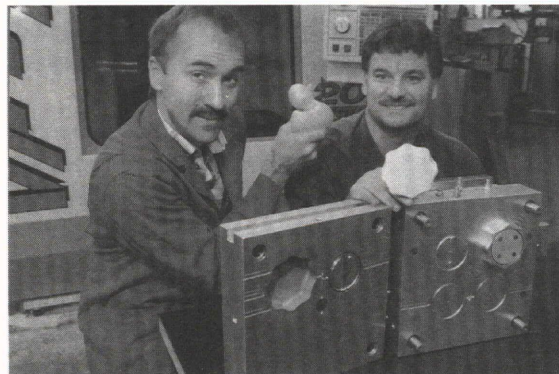
Rob Neilson, program head of Information Systems Technology, is currently leading two different Technology Centre projects funded by CANARIE, that involve developing software to manage routing and quality of service provision for next generation Internet networks.

The Tech Centre is assisting **Barry Pointon**, physics instructor, in performing a computer simulation of a medical imaging system, called Positron Emission Tomography (PET). PET is an advanced imaging technology in the field of nuclear medicine. His research may accelerate the introduction of newer and lower cost PET machines into clinical environments.

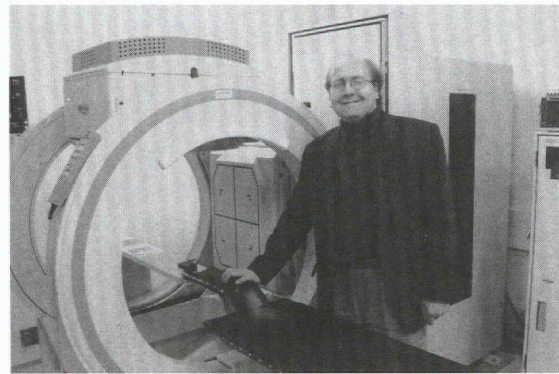
Instructor **Paul Tinari**, of Environmental Engineering Technology, developed an idea for a novel exercise fin used to strengthen the lower back and legs. **Connie Loss**, a student from the Technology Teacher Education Program, then created a plaster mold for the fin and produced 10 prototypes of the device.

Want to get involved, and are not already listed in the BCIT Director of Expertise, phone Kelly at 451-6823.

— from Kelly Gervais



Left: Jeff Melnyk (R) and Ernst Janzen (L) show off the mold they developed to create a new rotating bathtub drain. Right: Barry Pointon is developing a computer simulation of a medical imaging system.



Sylvia Raschke holds a mold of a human arm that she created for a new medical device project.

Other faculty and staff members involved in applied research projects:

Name	Dept/Program	Project
David Hamilton	Communication	Voice Recognition Software
Ernie Hancock	Electrical	AC PV Module Project
Owen Hayward	Carpentry	Various
Don Jarvis	Geomatics	AC PV Module Project
George Jones	Welding	Various
Rob Krpan	Civil & Structural	AC PV Module Project
Emanuel Kulhanek	Mechanical	Top Rollshutters & Thermos
Peter Levar	Building	Flexible Wall System
David Lewis	Robotics	Pyng Project
David Lick	Painting	AC PV Module Project
Kevin Neustaedter	Steel Trades	AC PV Module Project
Al Payne	Civil Structural	AC PV Module Project
David Rees-Thomas	Electronics Engineering	Oxygen Controller Prototype
Larry Smith	Steel Trades	AC PV Module Project
John Witmer	Steel Trades	AC PV Module Project
John Wong	Physical Plant	AC PV Module Project
Ken Wong	Mechanical	Top Rollshutters
Nick Wong	Geomatics	AC PV Module Project
Al Wood	Welding	AC PV Module Project
Michael Young	Electroneurophysiology	Stellate Systems
Don Wilson	Plastics	Bed Fan Prototype

take note!

New Engineer Cadet Program

BCIT, in conjunction with several leading international shipping companies, is pleased to introduce a new program in marine engineering for high school graduates with a strong background in math and science, and a keen interest in careers as deck or marine engineer officers at sea.

Officer Cadets may begin with entry-level Marine Engineering Officer Diploma program, or the entry-level Deck Cadet Diploma program (under development). These co-operative programs lead to a Diploma of Trades Training in Marine Engineering; Marine Engineering Officer or Diploma of Trades Training in Nautical Sciences (under development), with the opportunity to continue towards the proposed Bachelor of Technology in Shipping Operations and Management Degree.

This program commenced on Sept. 28. It is a four-year program at the Pacific Marine Training Campus.

— from Melodie Clarke, for RCE (Bob) Kitching, Associate Dean, PMTC

Canada Savings Bonds

Canada Savings Bonds applications are available in the Finance Dept. in NE1. One application is needed for each person you are buying for. Completed applications must be returned to Finance by Oct. 30. Contact Ken Anderson at 432-8710 for more information.

ecotips

Hold a garage sale

Instead of throwing away items you no longer need, or consider "junk", sell them at a garage sale. It can be a profitable and fun way to ensure items are re-used. Join forces with friends or neighbours — more sellers mean less work, and a larger inventory means more buyers. Advertising is also cheaper, when it's a shared expense. Leftovers can always be donated to a charity or service organization.

Bridesmaids dresses

Who says they'll never be worn again? Donate them to your nearest day care or family centre. The kids will love playing dress-up in princess' gowns. Other "imagination" clothing will also be welcomed.

Soggy weather did not dampen spirits at Community Living Day

It was wet at Guichon Creek, behind BCIT, on Saturday, Oct. 3. After a hot, dry summer, the skies decided to release a torrential downpour during the First Annual Community Living Day. But even the rain couldn't spoil the enthusiasm of those participating.

The event, which spotlights individuals and organizations working to integrate people with disabilities into the community, attracted 25-30 people despite the weather. BCIT was involved in the Environmental Clean-up portion of the event. Forty trees were planted adjacent to the creek corridor by people with disabilities.

BCIT's Bob Gunn (Fish Wildlife and Recreation Program) was on site, and coordinated BCIT's involve-

ment. "The students and I prepared the site and provided resources for planting. Because we were expecting some of the participants to be mentally and physically challenged, we wanted to be sure to prep the site appropriately. It's a difficult site to plant at," he explained. "We pre-dug the site so the holes were ready to go. We oversaw the planting work, and gave everyone a background on the work that was going on to restore the wildlife habitat at Guichon Creek."

"The spirit of the people really embraced the whole idea [of Community Living Day]," he continued. "Everyone seemed to enjoy being there and being involved in the event. The groups that organized the event did a really good job. There were lots of positive comments about BCIT's

involvement." Other BCIT community members included president Brian Gillespie, who said a few words of encouragement, and Fish Wildlife and Recreation program head, Mark Angelo, who emceed the event. Some members of the media, and local MLA Joan Sawicki were also present.



Bob Gunn plants a tree as part of BCIT's environmental clean-up on Community Living Day.

Kids break up environment meeting

A group of rain-coated children stormed into a faculty and staff meeting on environ-

mental literacy and planning on Oct. 14. The BCIT Child Care kids presented drawings they'd

created, with the caption, "Thank you for thinking of us and protecting the environment."

The NW1 boardroom was quite full with almost 50 deans, associate deans, program heads, chief instructors, and other interested persons, including Burnaby-Willingdon MLA Joan Sawicki. The diverse group let the little tykes melt their hearts. After all, they are the ones who will bear the environmental and economic costs foisted on them by preceding generations.

In addition to the children's visit, presentations were also made by: Dr. Bill Rees from UBC, the co-developer of the Ecological Footprint concept; Robert Abbott, a strategic business consultant in the international environmental field; Rick Kool, a provincial specialist in environmental education; and Sherry Campbell, BCIT Management Degree program on organizational change. The presentation was followed by a

workshop which explored what BCIT can do to take advantage of the opportunities presented by the environmental crisis, and sketch out plans for the coming years.

Afterwards, Rick Kool commented, "It was a fabulous morning. I was very impressed with the attentiveness of the gang there." Kool commended BCIT for sponsoring the workshop, and the direction of integrating environmental protection into the curriculum and operations at the Institute.

The purpose of the workshop was to inform educators on the severity of the environmental crisis, and to point out both challenges and opportunities therein.

Mark your calendars for Eco-Fair '99, BCIT's Environmental Technologies, Careers and Citizenship Exposition, on April 14. For more info, call 451-7060.

— from Greg Helten



BCIT Child Care children get ready for their presentation at the Environmental Literacy and Planning Workshop.

Campus Crime Stoppers

Bikes stolen from the bike rack, on the north side of building SW3, Sept. 23-24, as reported to the RCMP:

- Red Giant, mountain bike, worth approximately \$800
- Metallic blue Rock Hopper, 21-speed
- Green mountain bike, 21-speed

If you know anything about these bike thefts, or any other crime, call 669-TIPS. Crime Stoppers can also be reached from anywhere across Canada by calling 1-800-222-TIPS.

Tips for Preventing Theft

The most common crime on campus is theft, such as wallets, purses, carrying bags, computer equipment, automobiles, and other equipment. Practice the following:

- Engrave valuables with an ID number for instant identification if stolen articles are recovered.
- Do not leave valuables in your locker.
- Avoid carrying large sums of money.
- Consider anti-theft devices for your automobile.
- Do not leave valuables in your car.
- Keep personal property with you at all times, and in your sight.

— from Donna Montgomery, Crime Stoppers Chair, BCIT

TECHNOLOGY CENTRE SPECIAL EDITION

Message from the Director

The future for the Technology Centre appears brighter than ever.

As a result of an excellent effort on the part of all the departments, the Technology Centre reached and surpassed many of its goals for 1998 within the first six months of the year.

The Group for Advanced Information Technology (GAIT) is becoming more recognized for its unique capabilities and this in turn is attracting applied research and development projects at the cutting edge of technology. An indication of their success is a recent contract (for three projects) from CANARIE (Canadian Network for the Advancement of Research), which focused on managing growth on the next generation Internet. Progress is also being made toward the establishment of a Centre for Internet Engineering.

The Health Applied R&D group has successfully focused its efforts on increasing their client list and recruiting faculty involvement in applied research with industry. This group recently completed several

important projects for industry clients and has several other exciting projects in the proposal stage, including a number relating to the Living Laboratory at BCIT's downtown campus.

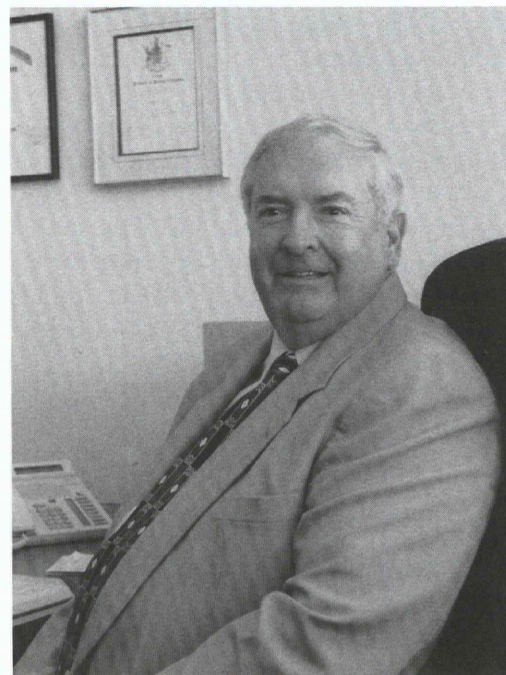
The Technology Centre reached and surpassed many of its goals for 1998 in the first six months of the year.

The Photovoltaic Energy Applied Research and Development Lab (PEARL) is a newly developed and growing area of expertise for the Technology Centre. PEARL has been working in conjunction with BC Hydro on several projects and has several other prospects for the new year.

The Technology Centre is blessed with an astute and well

experienced Advisory Committee. Two long-time members of the Advisory Committee, Jim McEwan and Mike Volker, retired from the committee as of Sept. 30, 1998. Jim and Mike made exceptional contributions to the Technology Centre and we thank them for their efforts on our behalf.

Norman Streat, the Director of the Technology Centre, is on a six month sabbatical during which time he will be focusing on applied research and development activities at other colleges and institutes throughout North America and England. His research will provide new inspiration and direction for the Technology Centre in the future.



Gary Grant, Acting Director of the BCIT Technology Centre

Many of the projects I have referred to above will be discussed in detail in this special edition of Update. As you read through them, I am confident you will agree that the Technology Centre's future looks brighter than ever.

BCIT Living Lab's new leader hopes to help people of all abilities live better daily lives

How well does your home or work environment function? When was the last time you brought home a new device, gadget, or product, only to find out it didn't work the way you had hoped?

There is a special place at BCIT that is working hard to optimize the fit between people and their environments. It's called the Dr. Tong Louie Living Laboratory and it has a new Project Leader. His name

is James Watzke, and whether you work in Construction Management, or Occupational Health at BCIT, he wants to meet you. One of Watzke's many goals is to have BCIT faculty and students participate in the Living Lab's research and training activities.

Originally from the US, Watzke graduated from the University of California at Berkeley with a degree in Psychology, and obtained his PhD in Environmental

Psychology from Lund University in Sweden.

"I have approximately 15 years of research experience conducted in Sweden, the US, and Canada. My areas of expertise include age and disability sensitive design, injury prevention, geriatric rehabilitation, and assistive technology," says Watzke.

The Living Lab occupies 1500 square feet on the seventh floor of the BCIT Downtown campus. It is a large, open space resembling a movie set, and is capable of simulating, in full scale, assorted "real life" settings. The Lab also features a confidential viewing theatre, a portable wall system, and a sophisticated data acquisitions and analysis system.

"We can conduct any applied research that attempts to improve the function of any device, technology, or environmental feature (home, medical, occupational, or other). The Lab can also be used for training activities; e.g., to teach students or industry partners the best way to perform each step of a specific work-related task," explains Watzke.

Two projects currently being conducted in the lab include a study to optimize the design of kitchen and bathroom spaces; and, a study to evaluate the effectiveness of portable lifting devices in reducing injuries to home care workers.

The Living Lab has recently received a major award from the Canadian Foundation for Innovation based on a joint application from BCIT's Health Applied R&D, and SFU's Gerontology Research Centre. This grant will provide the infrastructure to place the Lab at the Leading Edge of facilities conducting human factors research.

For more information about the Living Lab, contact Dr. James Watzke at 412-7419 or e-mail jwatzke@bcit.bc.ca.



The Living Lab project leader, James Watzke has some fun with the Lab's motion analysis "calibration cube".

take note

BCIT Technology Centre Advisory Committee Members

Stepping Down (as of Sept. 30, 1998)

Dr. Jim McEwan, President Western Clinical Engineering Ltd.

Michael Volker, Director University Industry Liaison Office Simon Fraser University

Present Members

Dr. Gary Birch Director, Neil Squire Foundation

Pat Collins, PhD, FCACB (Chair) Director, Business Development, MDS Metro McNair

Paul Geyer President, Mitroflow International Inc.

David Hughes Director, Sierra Systems Consultants Inc.

Dr. Joseph Mueller, ITA NRC-IRAP

Phil Mundy President, Product Design Group, Inc.

Tom O'Flaherty Director, Ernst & Young

Dr. Jim Reichert Science Council of BC

Ken Spencer Creo Products Inc.

Sal Visca Manager, E-Business Solutions for the Education and Health Care Industries

Internal

Dr. Brian Gillespie President, BCIT

Dr. Gerry Moss Vice President, Student Services & Educational Support, BCIT

Mal Stelck Vice President, Education, BCIT

Dr. Norman Streat Director, Technology Centre, BCIT

New to the Committee

Linda Thorstad Vice President, Corporate Relations, Viceroy Resource Corporation

coming up

Exciting Applied Research Projects coming soon to the BCIT Technology Centre:

New Internet Engineering Lab
The Technology Centre's proposal for a state of the art Internet Engineering Lab to the CA*net Institute's 1998 funding competition has been short-listed and we have been invited to participate in the final stage of the competition.

An improved system for securing wheelchairs
Developing an improved and safer system for securing wheelchairs on buses for BC Transit.

Neonatal Ventilator
Developing a more subtle approach to conventional ventilation to meet the special needs of low birth weight infants.

Intersection Road Lighting System
Investigating a lighting system for traffic intersections that would light up specific lane(s) to show the right-of-way.

The U-Rex Rest system
Developing and testing a unique system of cushions designed to alleviate back pain and discomfort.

Pressure Sensor for patients with ankle injuries
Developing an innovative pressure sensor that will notify patients with ankle injuries when they are putting too much pressure to the injured leg.

Study of the effects of lifting on healthcare providers
The Technology Centre has received a grant for \$40,000 from the Workers' Compensation Board (WCB) to evaluate the effectiveness of portable lifting devices in reducing injuries to home care providers. The study will take place in the Dr. Tong Louie Living Laboratory.

staff news

Oh Baby!

Nancy Paris-Seeley, Director of the Technology Centre's Health Applied R&D Program gave birth to a baby girl, Mia Giovanna Paris-Seeley on Sept. 9. Mia was 11 days early, and weighed in at 6 lbs, 3 oz.

Leading edge research on the next generation Internet

On the Internet, increasing bandwidth can be compared to adding lanes to a highway. New Internet technologies need more bandwidth to operate efficiently. But adding bandwidth is no less complicated than adding lanes to a highway. Similar issues arise: Where do you put them? How do you construct them? And, it would be great to have 10 lanes going in each direction, but how will the extra lanes be managed? The old methods of alternating don't work anymore. New strategies have to be developed.

The Group for Advanced Information Technology (GAIT), in collaboration with Robert Neilson, a program head in BCIT's Computer Systems Technology program, has recently began working on three new projects focused on managing growth on the next generation Internet.

The three projects are funded by the Canadian Network for the Advancement of Research, Industry and Education (CANARIE), a not-for-profit consortium that, among other things, provides funding for research focused on stimulating the development of the information highway in Canada. The Tech Centre won the funding for these projects based on proposals developed by GAIT, which were reviewed and selected by a committee of IT professionals across Canada.

The GAIT team is using a new high speed (high bandwidth) Internet network, called CA*netII, to conduct the research. The CA*netII is used exclusively by leading research institutions and universities to test and deploy next generation Internet technologies and services.

Route Management System

The first project involves developing and testing a Route Management System for the next generation Internet. On the Internet, information is passed from one network to another through devices called routers. Routers take incoming messages and direct them through a maze of different connecting paths to reach their final destination.

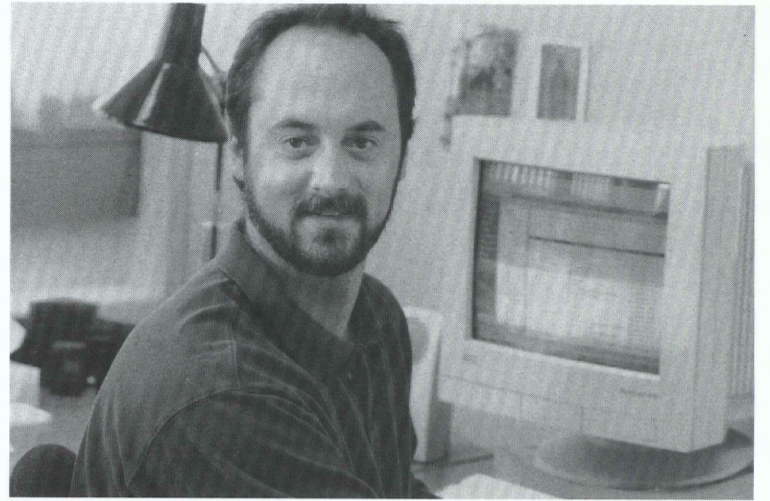
"Many of these Routers are directing large volumes of information on hundreds or even thousands of possible routes. At present, routers are set up manually by network operators. These operators need tools that will help them maximize router utilization and define routing policies that meet the different needs of individuals and organizations," explains Neilson, project leader on two of the three projects.

The GAIT research team is developing a Route Management System that will give network operators the ability to automatically configure routing policies based on data maintained in a central database.

"These tools will enable operators to change high level routing policies and have the new policies quickly reflected in the network. The end result is increased efficiency in the management and transfer of data on the Internet," says Neilson.

Differentiated Service on the Internet

Current Internet services are based on providing best effort service with no differentiation between any types of Internet traffic. The Tech Centre's second CANARIE funded project involves developing an infrastructure that will allow



Robert Neilson is working with the Technology Centre on two projects focused on the next generation Internet.

Internet service providers, such as BC TEL and Rogers, to offer a Preferred Quality of Service.

"The needs of customers using advanced Internet applications such as video conferencing and telemedicine are not being adequately met by the current Internet network. Applications like these demand high bandwidth in order to travel across the net without interruption or delays," explains Neilson.

With the new technology being developed by the GAIT team, customers using advanced applications could obtain preferred service over normal Internet traffic. By tagging certain Internet messages to indicate a preferred level of service — similar to a car pool lane on the highway — these messages would receive a higher priority and more expedient delivery.

Multipoint Video Conferencing

Video Conferencing is an extremely powerful tool enabling reduced travel costs and encouraging collaboration

and learning by facilitating virtual meetings and classrooms. However, video conferencing is constrained by today's Internet, due to its high bandwidth requirements. The CA*netII has both the speed and bandwidth to meet these extreme requirements.

The Tech Centre is creating a demonstration system to showcase the true potential of this exciting technology. "Using existing state-of-the-art hardware and software, we will assemble and test the system on the CA*netII with educational and research partners at remote sites," explains Clay Howie, Project Leader. Laurentian University, College Boreal, Cambrian College and others, are potential partners in demonstrating distance learning via this project.

"The completed system will be a working, useable, high-speed, nation-wide video conferencing system delivered over the next generation Internet," says Howie.

— from Kelly Gervais

Fast-changing industry appeals to new GAIT director

Michael Hrybyk has always been interested in computers. He received his Masters degree from John Hopkins University



Michael Hrybyk (centre) and the GAIT team.

in Baltimore, a blue-collar, fast-paced industrial city on the eastern US seaboard. He has been involved in Internet

networks, Unix systems, and software development for nearly 20 years, and his experience has taken him from coast to coast, both in the US and in Canada. After various positions managing computer systems at several American universities, his family prompted a move to Vancouver.

Today, Hrybyk (pronounced rye-bick) makes his home at the BCIT Tech Centre, as the Director of GAIT

(Group for Advanced Information Technology). He also serves as general manager of BCnet, which provides backbone Internet service to higher education, and provides the gateway to CA*netII, a high speed Internet research network.

As part of the Technology Centre, Hrybyk assists all types of organizations developing products or implementing services in the emergent information technology sector. The group focuses primarily on providing solutions in two areas: Internet Engineering, and Advanced Information systems and New Media.

Hrybyk is also involved in trying to build an engineering lab at BCIT, not only as a training venue for students, but as a way of involving industry as well. However, projects like these need funding, so Hrybyk

spends a lot of time applying for grants to get projects off the ground. "Funding for these initiatives is limited. If there was more support available, it would result in better trained BCIT students, capable of holding Internet network analyst positions, and advancements in the state-of-the-art of the Internet," says Hrybyk.

Hrybyk loves his work. Working in a rapidly changing industry is stimulating, and trying to keep up with innovation keeps him on his toes. "My job at the Technology Centre allows me to concentrate on new ideas concerning the Internet. Even after splashing around the Internet pond for almost 20 years, I'm still very excited about its development and its potential," Hrybyk says.

Tech Centre opens global competitiveness with ISO 9000 training

Based in Geneva Switzerland, the International Organization for Standardization (ISO) is an agency whose research promotes the development of international standards for the exchange of goods and services.

Laura Penner, who works for the BCIT Tech Centre, facilitates industry training of

the ISO 9000 series of quality management standards.

The ISO 9000 series is a set of generic management standards that when implemented maintain an efficient quality system in companies. It helps industry avoid "costly after-the-fact inspections, warranty costs, and re-work".

How does a company know

it needs the ISO 9000 system? Most often the system is implemented as a result of customer demands or competition. The sales and marketing team will report an industry trend to senior managers, and they in turn will implement the system within their companies. Other times, management identifies the need and can see the benefit for a quality management system.

"Companies are using quality to differentiate their products and services from their competitors," says Penner.

"All employees will benefit from ISO 9000, but the system requires senior management support and commitment in order to integrate it into daily activities," she explains. "ISO is a management system for continuous improvement. We spend a lot of time going over that point when we present the system to industry."

Penner has worked at BCIT since Dec. 1997. Prior to that, she was an ISO 9000 auditor, where she assisted companies in implementing their quality systems. Corporations continue to build quality systems around the ISO 9000 series of standards, but you don't have to be a multinational corporation to implement ISO into your business. ISO 9000 applies to organizations involved in hardware, software, processed materials or services, or any combination thereof, of any size, and at any location.

Laura Penner and the BCIT Technology Centre are hard at work helping BC companies understand ISO 9000 and improve their competitiveness in the global marketplace. For more details, contact Laura Penner at 451-6822, or e-mail lpenner@bcit.bc.ca.

— from Harold Simons



Laura Penner provides ISO 9000 training at the BCIT Tech Centre.

Tech Centre develops Ear-rigator

Many people experience hearing problems caused by chronic wax build-up in the ear passages. For decades, doctors have treated this by directing a stream of water into the ear with a syringe to dislodge the wax and clear the passage.

Dr. Stanley Hurwitz had been syringing ears for over 15 years when he decided there had to be a better way. "A syringe doesn't provide any pressure control or gauge how much water is traveling into the ear. It's a messy and slow process and, if not done properly, could potentially cause damage to the ear drum," says Hurwitz.

Hurwitz produced designs and a working prototype of

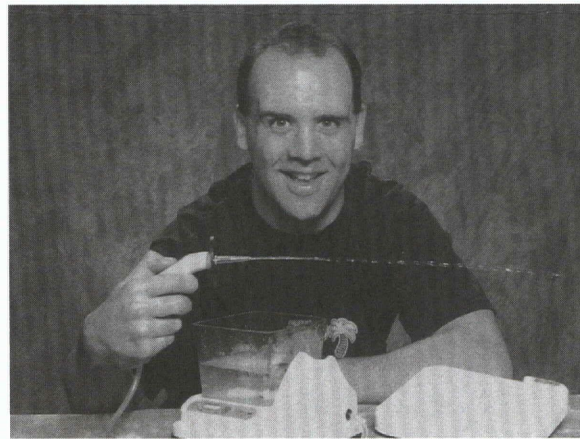
the Ear Irrigator, a simple electric syringe that provides pressure control, making it safer and easier to use.

After investigating several options, Hurwitz chose to work with the BCIT Tech Centre's Applied R&D program. "I was impressed with the people and the assistance I received at the Technology Centre. They were able to provide me with a timely and competitive quote," says Hurwitz.

Project Technologist Nigel Halsted refined the design to include a micro processor and digital readout and added eight variable pulse settings. He also incorporated a power saving sleep mode and sophisticated battery charging circuitry.

Once the electronics and mechanics of the design were complete, the Tech Centre consulted on the Emily Carr College of Art and De-sign on the ergonomic and industrial design. With all the components now in place, Hurwitz' crude prototype had been transformed into a highly automated medical device and marketable product.

"The work conducted by the



Nigel Halsted with the newly developed Ear Irrigator

Tech Centre has been fantastic. I am very pleased with the results and would recommend the Centre to any of my colleagues," says Hurwitz.

— from Kelly Gervais

And the new ITA is... !

The BCIT Tech Centre provides a home for two Industrial Technology Advisors for the National Research

Council's (NRC) Industrial Research Assistance Program (IRAP). Bringing specialized skills and expertise to the pro-

gram, these representatives provide technical assistance, and advice and guidance on external funding to small and medium-sized businesses.

Nick Fong, a former instructor in BCIT's Biomedical Engineering program, has held one of the ITA positions since 1989. The second is rotated among BCIT staff and faculty on a yearly basis as a professional development opportunity.

Christine Taggart completed a successful one-year term this summer and has accepted a six month extension of her ITA position to work with Aboriginal Business Canada, focusing on First Nations clients.

Chuck Spong, from BCIT's Operations Management

Technology, has replaced Christine in the unique and rewarding role of ITA for 1998/99. With a strong background in operations management and industrial engineering, Chuck will be a welcome addition to the IRAP program. "I'm looking forward to the next year because it will increase my exposure to new advances in industry, and help me to build and broaden my contact base, but most importantly, it will allow me to act as a conduit for industry to access BCIT," says Spong.

— from Kelly Gervais

take note

Crime and Science '98

Ever wonder what lurks in the minds of dangerous criminals? Want to find out what characters portrayed in "Millennium", "Profiler", "Cracker", and "Silence of the Lambs" are thinking? This year's Crime and Science seminar on Forensic Profiling sheds light on the "mental maps and behaviours" of violent offenders, and on the techniques that use this information to track down serial criminals.

On Saturday, Nov. 28, BC's experts in psychological and geographical profiling present their findings at the Justice Institute of BC, at 715 McBride Street in New Westminster, 9:30 a.m. to 4:30 p.m. It's the Third Annual Crime and Science Seminar presented by JIBC/BCIT Forensic Technology Program and the BCIT Tech Centre.

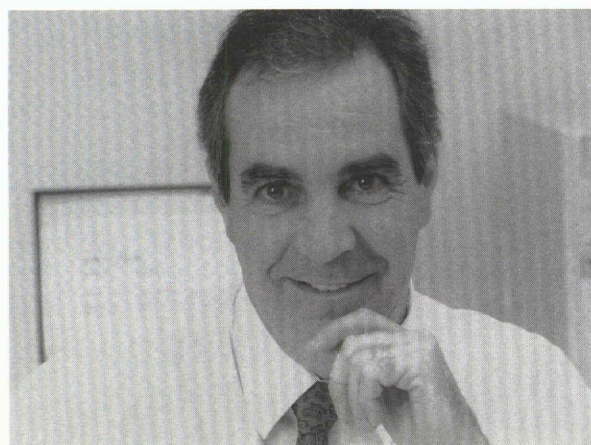
The day begins with Deputy Inspector Kim Rosso, of the Vancouver Police Department, Geographic Profiling Section. During his 19 year policing career, this PhD in criminology has attracted the attention of police investigators around the world, including the FBI, the Japanese National Police, and police agencies in Great Britain.

The afternoon session team, Sergeant Christine Wozney and Sergeant Keith Davidson, of the RCMP Criminal Behaviour Analysis Unit take a look at psychological profiling and VICLAS. Sgt. Wozney, a 22 year veteran of the RCMP manages the Violent Crime Linkage Analysis System, a computerized super-sleuth, to assist police agencies in BC with homicide investigations. Sgt. Davidson, one of the designers of VICLAS, has focused over half of his 23-year career as a Criminal Analyst on sexual violence and has assisted on multiple homicide cases in Canada and the US.

If you're considering a career in Forensic Technology, or want to write murder mystery stories, you'll benefit from attending this session. All are welcome to attend, but note that some case descriptions and illustrations could be disturbing.

Intrigued? Please call 432-8761 for registration information, or visit our Web site: www.bcit.bc.ca/~tc/html/crimescience98.html

— from Lynne Brisdon



Chuck Spong, new ITA for 1998-99

tech centre

New medical device will make surgeons' job easier

An Electro-Surgical Unit (ESU) is a hand-held device that uses high frequency, high voltage pulse waves to make incisions in tissue, or, using different frequencies, to stop bleeding by coagulating blood. This technology has been used for many years by surgeons. Although the technology is proven, Visions Integrated Health, a local medical concept development company, felt that the device itself could be improved.

At present, the ESU has only two different sizes of electrodes to choose from. This provides very little flexibility and means that a surgeon has to switch electrodes during an operation if the procedure requires two different depths of incision.

In addition, shadows cast by the surgical team fall unavoidably on the working area requiring a member of the team to light the area throughout the procedure. Another team member is needed to suction the potentially hazardous gases caused by the electrode as it cuts through the tissue. These functions can prove difficult and awkward during long operations and when performing deep tissue work.

Visions Integrated Health approached the Technology Centre's Health Applied R&D Program, well known for its extensive work in medical device development, with some ideas for improving the ESU.

Project Technologist Nigel Halsted evaluated the device and then created a prototype of a new and improved ESU. "I incorporated an adjustable locking electrode with a range of approximately five inches. With this new feature, surgeons will be able to select any size of electrode they want and easily adjust it with one hand during the operation," explains Halsted.

The prototype also includes on-board suction to remove potentially hazardous gases and a high intensity cold light source that illuminates the working area, dramatically increasing the surgeons' visibility.

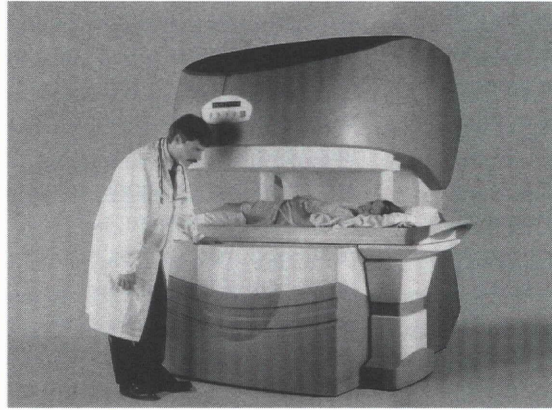
"The client is in the process of testing and evaluating the device and once that's done, a student at the Emily Carr College of Art and Design has created an industrial design that will transform the prototype into a marketable product," says Halsted.

New MRI system could help reduce future health care costs

On Oct. 27, Millenium Technology Inc. (MTI), officially opened their new Magnetic Resonance Imaging (MRI) research facility in a portable building outside the Heather Pavilion at Vancouver

General Hospital.

Over the past year and a half, MTI has been working with the Tech Centre on a project involving research, development, and commercialization of a permanent magnet MRI system.



A rendering of Millenium Technology Inc's new MRI, which BCIT helped develop.

MRI systems allow technicians to produce images of internal organs without exposing patients to ionizing radiation. Unfortunately, this innovative alternative to

x-rays comes with a \$2 million US price tag that has put it out of reach for many small- and medium-sized hospitals.

Ivan Li claims the new VIRGO MRI system being developed by MTI costs about \$800,000 US, less than one half of conventional MRI systems, and is much less expensive to operate and install. Li is one of the Technology Centre's team of researchers specializing in medical device development, clinical trials, and regulatory affairs. "The difference is the type of magnet. The Millennium system uses a permanent magnet instead of a super conductor magnet," explains Li.

In June, the magnet, weighing 20 metric tons, and the size of a small trailer house, arrived from China.

Once the system is assembled, MTI will be ready to start comparative trials. The Health Applied R&D team will coordinate the comparative trails and provide regulatory affairs and quality assurance services on an ongoing basis.

The VIRGO MRI system will make MRI technology available to many mid-sized or community hospitals that cannot afford the initial investment and large operating and service costs of conventional MRI systems.

—from Kelly Gervais

Industry challenges, student solutions

Every year, hundreds of BC businesses discover innovative solutions to their problems by putting trained BCIT students to work for them through industry-sponsored projects.

Ideally, the project clearly states a problem to be solved or an opportunity to be exploited. The students are then required to create a sensible and innovative solution which

they then present to their sponsor in a business-like manner. All student projects are supervised by BCIT faculty and the project work counts towards students marks and graduation requirements.

These projects provide benefits to both sponsors and students. Sponsors get fresh and objective perspectives on their challenges, often in the

form of solutions that can be implemented right away. Students benefit from invaluable experience that only comes from hands-on work.

BCIT's program of industry-sponsored student projects is one of its most successful initiatives, and in 1993, won a national award for excellence in business-education partnerships from the Conference Board of Canada.

1998 award winners included:

- Electronic technology students designed a toy crane controller for the \$1 per try plush doll machines found in corner stores and arcades. Hunger House Toys, who sponsored this project, wanted a Canadian-built crane, instead of an imported US machine.
- A group of marketing management students conducted an analysis of the downtown Vancouver market

for Virgin Megastore.

- Students in building science technology conducted a project analyzing the leaky condo project. They found that a common industry practice of probing outer walls for water content is not the most accurate testing method.

Faculty and students review potential projects to determine if they meet BCIT's educational requirements. If there is an appropriate match, project sponsors are asked to provide guidance to students and to evaluate the results of the project. Some programs charge a nominal registration fee (up to \$200).

Industry sponsored projects are conducted in a wide range of areas. If you would like more information on industry sponsored projects, call (604) 432-8761.

—from Peter Beresford



Building Technology students, Steven Cork and David Deamer tackled the "leaky condo" crisis.

Night Light for Joggers

Joggers, bikers, or anyone who goes out after dark may soon have some new options in safety lights. At present, reflective tapes and Cylumes (disposable chemical light sources that light up when shake and broken) are the most commonly used safety light devices. The problem with these devices is that they either rely on other light sources for their illumination or they have short life spans and are disposable.

Tekron, a small local company, wanted to create a new reusable safety light independent of other light sources. The company approached the Technology Centre for help. Using

innovative technologies, Joe Newton, Project Technologist for the Technology Centre, developed two different Personal Illumination Devices (PID).

"Both devices are cylindrical, battery-powered lights that can be attached to a bike, backpack, or belt. The first is an electro luminescent light panel similar to the back light created by indigo watches. The second option, also battery powered, uses a woven fiberoptic mat to disperse the light from a Light Emitting Diode (LED). This technology is also used in aircraft to back-light control panels," explains Newton.



Joe Newton demonstrates a newly developed safety light.

Newton's work on the Personal Illumination Device project has inspired the client, who is now considering

numerous possibilities for other products down the road.

—from Kelly Gervais

Tech Centre uses sunlight to energize BC Hydro

When the traditional electricity supply system went down last winter during an ice storm in Montreal, it proved that alternative solutions to conventional power make sense. Recognizing a growing and important area of applied R&D, the Tech Centre formed PEARL (Photovoltaic Energy Applied Research Lab).

The driving force behind PEARL is its Project Leader, Ljubisav Stamenic, who joined the Centre a year ago. Stamenic and his team have been working steadily on projects for industry involving photovoltaics and other renewable energy technologies ever since.

"One of our most exciting projects involves integrating a photovoltaic system into the building facade of the Tech Centre (NE25) and connecting it to BC Hydro's main utility grid. Powered by the sun, the PV system will produce electricity, then feed it back into the utility grid, actually providing BC Hydro with more power," explains Stamenic.

The Tech Centre relies on

the support of BCIT faculty and staff to take on projects requiring varying areas of expertise. "This project in particular has generated a tremendous amount of interest from faculty. In fact, nine BCIT faculty and staff members, from five different BCIT programs, worked on it," says Stamenic.

Stamenic and his research team will study and evaluate the interactive compatibility of the PV system and Hydro's utility grid, and investigate future applications for grid-connected PV systems in BC.

PEARL is also developing a unique photovoltaic system for BCIT. Shaped like a tower with PV modules on all four sides, this system will also be connected to BC Hydro's utility grid and will be used as a teaching aid for a new BCIT program in photovoltaics. "Students will use the system to research and test various ways of increasing the energy output of the tower," says Stamenic.

Last spring the PEARL research team completed a project for PRO LITE. This



Faculty and staff from five different BCIT programs worked together to integrate a photovoltaic system into the building facade of the Tech Centre.

small BC-based company asked Stamenic to design and build a prototype of a Solar Photovoltaic Powered real estate sign. The company wanted the look and design of the structure to be the same standard real estate signs. Powered by the sun, the horizontal arm illuminates the sign for approximately five hours after dusk and can be placed at the most convenient location without regard for the nearest power line.

Stamenic feels strongly that by moving into the field of photovoltaics and other renewable technologies, BCIT and the Technology Centre are taking giant steps in the right direction. "Photovoltaics is a relatively new field with huge global potential. It is vital that research into various alternative energies continue."

— from Kelly Gervais

BCIT develops Top Rollshutters' great escape

Top Rollshutters, headquartered in Salmon Arm, B.C., has a product designed for home security and comfort. Their unique shutter system rolls down on the outside of a door or window to provide added insulation, privacy, security and, in certain parts of the world, protection from damage against natural disasters.

Installed as part of a home's window and door frames, the rollshutters make it extremely difficult for intruders to break in. Unfortunately, this also makes it more difficult for those inside the house to get out in an emergency.

The company turned to help them solve the problem. Mechanical engineer Jenny

Johansson was able to provide them with the solution.

"My first thought was, how can we design something that will be aesthetically pleasing, easy to use, easy to manufacture, and cost effective at the same time?" explains Johansson. The solution was an emergency release mechanism which allows the user to easily disengage shutter rails from the outside wall. Once the shutter is disengaged, the user can push the light weight shutter out, providing a fast escape route.

Johansson designed and built the prototype of the Emergency Release Rollshutter which will appear as an added feature on several of Top Rollshutters' products early next year.



A Top Rollshutters employee pushes the Release Shutter out of the way for a quick escape.

BCIT Tech Centre helps local inventor shine

It all started one drippy, cold December day when Jo Ann Mathies was the reluctant assistant as her then-husband was stringing up Christmas

lights. "He was up on this huge ladder, getting rained in the face, and I was down below holding the wire, thinking, there's got to be a better way!"

The Decorative Light Rail System was the brain-child of that moment. Now, ten years later, Mathies has just launched the patented product she invented.

BCIT has been integral to this development – in more ways than one.

In 1997, Mathies took the BCIT Venture Program offered at the Downtown campus. The program taught her how to turn her product idea into a successful business. Mathies then turned to the BCIT Technology Centre for help with product development.

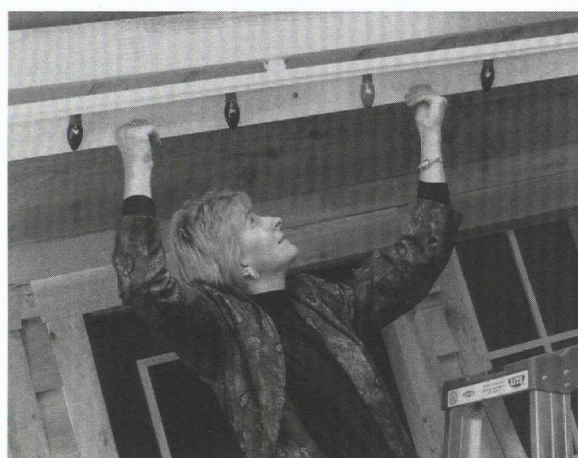
The challenge was to create a way to permanently mount a string of lights on a rail that would swivel back and forth to either hide or display the lights depending on the season.

Jenny Johansson, a mechanical engineer with the

Tech Centre, made it happen. Mathies remembers, "Because I didn't have the technical knowledge, I told them what I wanted, and how I would like the system to operate. The Tech Centre made it a reality."

The system is appealing for home owners, as well as restaurant owners and retailers who want the added decorative feature of string lighting, but like the option of hiding the lights away when they are not in use.

Initial response to the prototype has been enthusiastic, and Mathies is getting ready to launch the Decorative Light Rail System in Canada.



Jo Ann Mathies demonstrates her invention.

take note

Professional Development Workshops

Workshops are funded through the Instructional Development Fund established in 1989 through an agreement between BCIT and its Faculty and Staff Association. Any BCIT staff member may attend. To register, please call Karen at 432-8927, profs develop, or e-mail develop@bcit.bc.ca.

Instructional Skills Workshop

Tuesday, Nov. 3 and Thursday, Nov. 5, 1700-2000; and Saturday, Nov. 7, 14 and 21, 0900-1600, NE21-112B

Do you want to improve your teaching skills? Give interactive, interesting lessons? Improve your lesson plans? Increase your confidence and repertoire of teaching strategies by attending the Instructional Skills Workshop (ISW). The ISW counts toward the Provincial Instructor Diploma program as course 102A.

Library Research

Wednesday, Nov. 25, 1230-1400, Town Square B

How can librarians and instructors work together to make research a positive experience for students? Want some help in setting up good, "researchable" assignments? Tony will also discuss what kind of help students can expect from librarians and how students can access some of the on-line resources available to them.

Facilitator: Tony O' Kelly, BCIT Librarian. BCIT staff only. No charge.

just for fun

Questions without good answers

- How come you never hear about grunted employees?
- Can atheists get insurance for acts of God?
- Do Lipton employees take coffee breaks?
- What hair colour do they put on the driver's licenses of bald people?
- What was the best thing before sliced bread?
- Why are they called apartments, when they're all stuck together?
- If they arrested the Energizer Bunny, would they charge him with battery?

kudos

United Way winners

The winners for the Early Bird Draw are as follows:

Tanya Ebert, Purchasing
Jaguars Pub & Steakhouse

Carol Reid, Word Processing
Writing paper, compliments of
the Bookstore

Brian Kurlick, Student
Timeposter/Calendar,
compliments of the Bookstore

Glen Pellegrin,
Electronics Technology
Semiahmoo Golf and
Country Club

Jeannette Boldt, Physical Plant
T-shirt, compliments of
the Bookstore

Craig Cowan
Baseball cap & shorts

Susan Ames
United Way T-shirt

Shari Monsma
Molly Maid cleaning

Linda Nichols
Writing paper

Ann Kenny-Lee
Jaguar's Pub & Steakhouse gift
certificate

Amy Haugejorden
Semiahmoo Golf & Country Club

Gary Grant
Mike Fridays Pastaria gift
certificate

Brian Hosier
Bankers pen

Joan Campana
Chilliwack River Rafting tour

Geraldine Dunnigan
BC Lions Tix & Lone Star Café
gift certificate

Linda Paska
Manning Park Resort Escape
Package

Skills Canada Provincial and National Competitions

Mark Stoker, Electronic
Engineering Technology
(Telecommunications) won
Bronze in the Provincial
Competition and Silver in the
National Competition, in
Industrial Electronics.
Congratulations Mark!

*Ed. Note: Ever since we posted
the first Skills Canada winners a
month ago, we have been
hearing about several others.
Please be sure to send us your
news – award winners, and all –
as soon as it happens. Then we
can let everyone else on campus
know, too.*

United Way Final Round-Up!



Howdy Pardners!

Well, this is it – the last Update before BCIT's United Way campaign winds up. We're still hot on the trail to prove we're the "Best School in the West" by hitting that bullseye of \$93,000.

Halfway along on the trail we'd raised \$30,000* in staff pledges alone which is fantastic! But...we're still not there. So if you haven't yet pledged, we're in need of some sharpshooters to become part of the team and help us hit our target.

Congrats to all of those early birds who got their pledges in early. The winners of the Oct 16 early bird draws are listed on the left of this page.

There are some really great prize packages just waiting to be won! Every \$10 donated to United Way – or your favorite charity through United Way – means a chance to win (maximum of 10 chances).

With just one donation, you help so many people – one in three people living in our community. Now isn't that a great return on your dollar?

And payroll deduction makes it easy to give – you'll hardly even miss those few extra dollars you've donated.

Pledge cards must be in by Oct 30 to get in on the final prize package draws so make it a point to fill out your pledge card and get it in today!

And don't miss the bang-up "United Way Showdown party". It all happens Friday Oct. 30, from 2:00 to 4:00 p.m. in the Town Square. Join us for line dancing, a BCIT campfire sing-song with some special musical cowboy guests, door prizes and...the final draws! Western Duds encouraged!

Happy Trails – and thanks for considering a contribution to the United Way.

Sheriff Gord McLean and Deputy Jodie Wilson

**Building
Community
Together**
the United Way



**At time of printing, dollars raised in Shinerama and the Downtown Fashion Show hadn't yet been officially released to be added to our campaign total.*

It's Flu Season!

The Flu Vaccine has arrived at Medical Services

Yes, the vaccine is effective.

- The vaccine reduces upper respiratory illness (by 25%) and related absenteeism (by 43%) in healthy adults.
- It prevents 70% of pneumonia and influenza-related hospitalization among the community-residing elderly.
- Among elderly nursing home residents, the vaccine reduces illness by 30-40%, hospitalizations and pneumonia by 50-60% and deaths by 85%.

You cannot "get the flu" from the vaccination.

The vaccine does not contain live virus, so you cannot get influenza from the vaccine. The most common side effect is arm soreness lasting up to two days.

People at high risk are:

- Adults with chronic heart or lung disorders severe enough to require regular medical follow-up or hospital care.

- People aged 65 years or more.
- Adults with chronic conditions such as diabetes and other metabolic diseases, cancer, immunodeficiency, immunosuppression (including that of transplant recipients), kidney disease, anemia, etc.

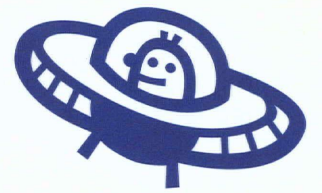
Those who should consider being given the vaccine:

- Individuals potentially capable of transmitting influenza to those at risk, such as health care and other primary care givers who have extensive contact with people in the high-risk groups, including students and Instructors in Clinical areas.

If you correspond with the above guidelines, you may get the vaccine at Medical Services. Students \$5, Staff \$7. Exact change would be very helpful.

Medical Services is located in the SAC Building, SE 16, Room 127 Hours: 0830-1630

We're on the look out!



Update is constantly on the look out for the latest and greatest happenings on campus. BCIT is a large community, and it is difficult to keep on top of everything. If something interesting or unusual is happening in your department, let us know.



Call Isabel in
Community Relations
at 432-8656, e-mail
ikolic@bcit.bc.ca, or
fax at 436-5762.



Have a spooooky Hallowe'en!

The **BCIT Update** is published throughout the school year by the Community Relations department within External Affairs.

Ideas, tips, faxed or written submissions are welcome, and should be forwarded to the editor by **the Monday, two weeks prior** to publication. The editor reserves the right to edit for brevity, libel and accuracy.

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