

Technology Centre
Special Edition
Inside

BCIT Events to Come

Tuesday, October 18

- BCIT Toastmasters club meets every Tuesday, 0700-0815, Telephone Exchange Building.
- Tour day for Grades 6 and 7 students from the Burnaby School District, Burnaby campus.

Wednesday, October 19

- Celebration lunch, Town Square A and B, 1130-1300.
- Educational Council meeting, Administration building boardroom, 1200-1415.
- Workshop: Group Grades — Pros and Cons, SE6 Room 202, 1200-1400

Friday, October 21

- United Way casual day

Friday, October 21

- The School of Engineering Technology will host an all-day session with high school counsellors, familiarizing them with BCIT programs and career opportunities for high school graduates.

Thursday, October 27

- Chili Dog Day 1100-1330 Building SW3 Rm 2080 Chili dogs \$1.75, plain dogs \$1.25. Proceeds to United Way.

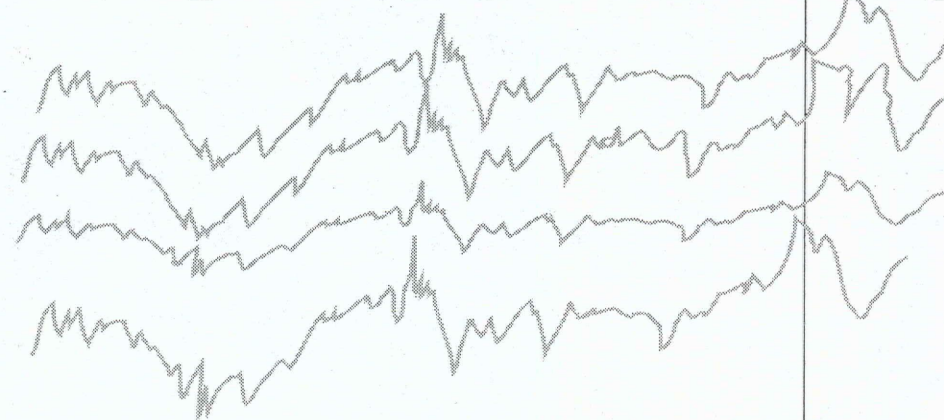
Monday, October 31

- United Way wrap-up event on a Gilligan's Island theme, in the Town Square cafeteria from 1130 to 1330. Reasonably priced buffet, prize draws and a prize for best castaway look-alike.

If you would like your event in Update's calendar contact Ronaye Ireland by telephone at 8738, by PROFS RIRELAND or internal mail. Deadline is one week prior to publication.

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

BCIT joins in latest research to improve psychiatric drugs



New research that maps the brain to track the effects of psychiatric drugs promises to make the medications more effective and reduce harmful side effects.

In an ongoing project with the Technology Centre, a team from BCIT and two other B.C. post-secondary schools has been working with elderly psychiatric patients at Vancouver's St. Vincent's Hospital, for the first time scientifically measuring how quickly and how well the drugs work.

Drawn from St. Vincent's Hospital, BCIT, UBC and Simon Fraser universities, the researchers presented their findings at an international psychiatric conference August 21 to 24 in Vancouver.

Tracking drug effectiveness used to be largely guesswork, notes BCIT's Michael Young, head of English Canada's only electroneurophysiology program and a research associate on this project.

In the past, doctors would typically ask for patient feedback

or watch for symptoms to improve—two measures not always reliable with elderly subjects.

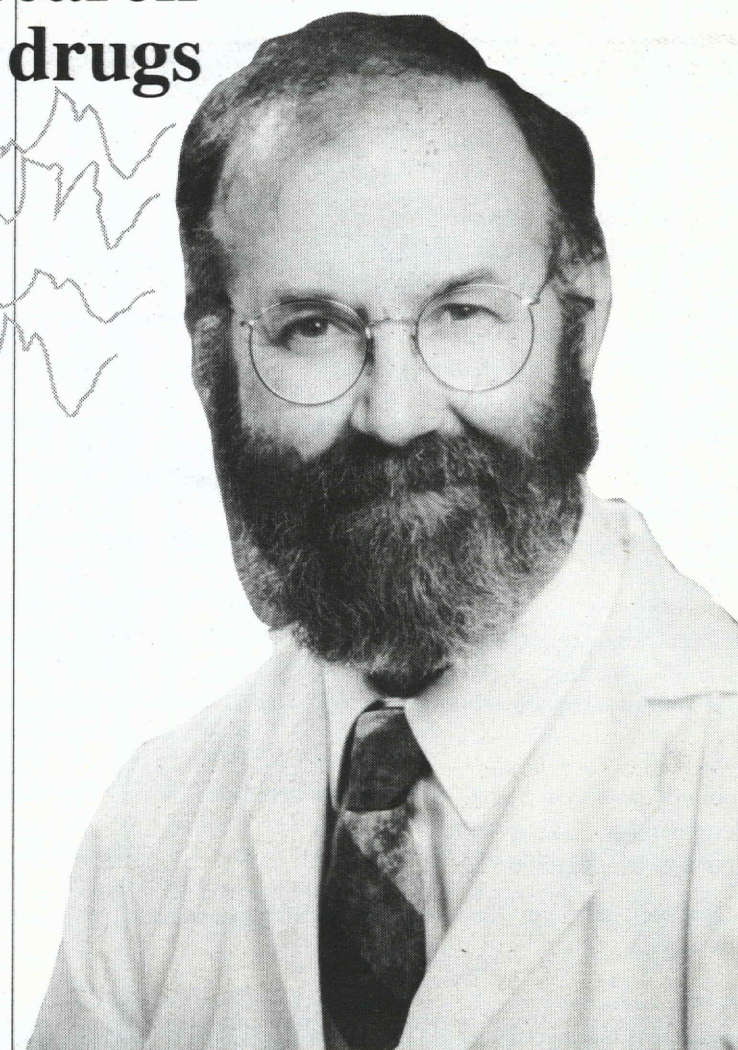
"Our results let drug makers change the applications of drugs and develop new ones," says Young, whose specialty of electroneurophysiology involves measuring electrical activity in the brain and muscles.

Led by UBC geriatric psychiatrist Raymond Ancill, the six-member team has spent three and a half years on the project, using a computerized brain mapper Young developed with the BCIT Technology Centre.

"For patients, this research could mean they'll take fewer drugs," says Young. "Those drugs will be more effective and have fewer side effects."

It was Young's brain mapper—refined for this project and in technical terms called a neuro-imaging device—that made the team's work easier and cheaper.

Essentially a specially programmed personal computer



Bert Schendel photo

BCIT's Michael Young is head of English Canada's only electroneurophysiology program.

with sensors that attach to a subject's scalp, the sophisticated instrument costs about \$10,000, roughly one-tenth the price of similar commercially available devices.

At that price, the technology is affordable for researchers and schools, making it an invaluable study and training tool.

Two of the BCIT-developed units have been sold, and another is in regular use in Young's electroneurophysiology program.

—from Stephen Barrington



Kate Pelletier

New associate dean for School of Trades Training

Kate Pelletier looks forward to the challenges of the coming year as she steps into her new role as associate dean of the School of Trades Training. "I never imagined that I would end up in the School of Trades when I started my education," says Pelletier. But she is quick to add that she's very happy to be in what she refers to as the most exciting area of BCIT. Her education includes a bachelor's degree in special education and sociology and a master's degree in religious education.

Pelletier came to BCIT in 1986 as a temporary employee in Program Advising. She then worked in the

Job Strategies unit before joining the School of Trades Training as the coordinator of women in trades/special initiatives. "As associate dean," explains Pelletier, "my job is basically administrative—making sure that things run smoothly. I am also responsible for the program area of Power Engineering."

"My focus is on the whole area of education and job training, making sure that the students get the best skills that are available," she says.

An association with trades training and women in trades

comes naturally to Pelletier. She and her two sisters all have jobs that could be considered non-traditional. One sister is an electrician and the other is a cell house labourer in a zinc plant in Timmins, Ontario.

When off campus, Pelletier likes to spend time outdoors. She enjoys kayaking, skiing and pursuing her latest interest—sailing. She'll get a chance to try out her sea legs later this month, when she heads to the British Virgin Islands for a sailing holiday.

—from Sheila Rees

Technology Centre develops new centre for multimedia research, development and education

"Multimedia is here. After years of hype and speculation, the marriage of video, sound, still images, text and charts—all combined inside an interactive computer—is finally reaching a mass audience."

—Beppi Crosariol, *Financial Times Canada*, February 1994

Multimedia may be here but the publishing industry is struggling with the concepts and challenges of incorporating it into their products.

"Multimedia represents a whole new way of producing product," explains Bruce Kenny of the ARCS Lab. "Reading the printed page is a linear experience—you start at the beginning and read to the end. A multimedia product is non-linear—the reader chooses any path they wish to view the information. Therefore, the processes and experiences of a print publisher do not easily translate over to multimedia."

It was these problems that first initiated three months of

discussion between the Technology Centre's ARCS Lab and Robert Macdonald, President of Media Clones, a design and editorial company.

In February of this year BCIT and Media Clones reached a verbal agreement to proceed with an exciting joint venture.

Media Studio is a new centre for multimedia research, development and education and on October 14, officially opened its doors to industry and BCIT faculty, staff and students.

Located on campus in the ARCS Lab (NE25 102), Media Studio will provide BCIT faculty with an excellent resource centre and students with unparalleled training opportunities.

"The great interest and expectations around multimedia requires that BCIT establish itself as a source for top notch multimedia producers, researchers and educators," says Kenny.



Robert MacDonald, Bruce Kenney (centre) and Zdenek Vintr at the Media Studio, a new centre for multimedia research, development and education.

Bert Schendel photo

Drawing on the technical expertise of the Technology Centre's ARCS Lab and the creative design abilities of their partner, Robert Macdonald, Media Studio will be able to undertake applied research projects representing a range of new media challenges with competence and creativity. The results of these studies will be available to industry enabling publishers to understand and

capitalize on the markets for new media products.

Media Studio will also author original multimedia products of their own seeking to set standards of technical and editorial excellence.

"By working closely with industry we will design and produce products driven by mission and markets, not technology," says Kenny.

He adds that in the six years he's been with the ARCS Lab, the Media Studio is one of the most exciting ventures the Technology Centre has been involved in.

"It combines research, industry and education to address industry needs in a brand new technology, and that's what BCIT is all about!"

—from Kelly Gervais



Malcom Sterling (left), Sea Island instructor and Peter Fenrich, software developer at the Interactive Multimedia Development Centre, work on the aircraft corrosion video disk project.

BCIT staff who are actively using multimedia technology. This has all helped build a solid and growing multimedia community at BCIT.

The technology can be applied to any subject and can make teaching and learning a lot faster and easier. "In the products we make, we ensure that students are going to learn effectively and efficiently," explains Fenrich. "If they are answering a question, for instance, they do not just click on an answer and get a message saying whether their answer is correct or not. They get immediate specific feedback which states why they are right or wrong and why other answers are right or wrong. This is one of the fundamental principles used to ensure that learning takes place."

Where appropriate, multimedia lessons can include video images and audio that further crystallize the subject matter in the learner's mind. "Two videodiscs that we created each contain more than 100 exciting clips of things high school students will not see in

Cont. on page 8

Multimedia: A community endeavour at BCIT

Multimedia is an exciting tool being used at BCIT that can help students learn, says Peter Fenrich, software developer with the Technology Centre's Interactive Media Lab.

Fenrich led a workshop on creating interactive multimedia lessons for six Trades instructors and one Health Sciences instructor last January. "The workshop allowed us, as a faculty, to identify the needs for this to continue and grow," says Fenrich.

The group put their new knowledge gained into practice

by producing a user-friendly interactive multimedia tutorial in basic hydraulics. Eight slide collection videodiscs were also produced which allow the still images to be instantly accessed through barcode technology. A workshop goal was to promote the use of multimedia at BCIT. For this goal has been realized. For example, Bill Johnson of Piping trades will be developing a simulation in Hydraulics. Enthusiasm for this workshop led to the successful 10-day faculty/staff workshop held in June called Multimanía '94.

In Multimanía '94, multimedia technology was used to introduce technological tools such as CD-ROMs, videodiscs, and authoring packages, basic principles in instructional design, media selection, screen design, and interactivity, and issues related to multimedia development and implementation. Some of the faculty, such as Diane Belyk, Anne Houseman, and Lawrence Parisotto, have already used the skills learned in projects they have done. Many of the afternoon workshops were led by

The **BCIT UPDATE** is published weekly throughout the school year by the Information and Community Relations Department within Marketing and Development. Ideas, tips, fax or written submissions should be forwarded to the editor by **1500 Fridays, five working days prior** to publication. The editor reserves the right to edit for brevity, libel and accuracy.

UPDATE is produced on Aldus Pagemaker Desktop Publishing software and printed on recycled paper.

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SPECIAL BCIT TECHNOLOGY CENTRE EDITION

BCIT Technology Centre celebrates five years and millions in research

Only a small sign points the way to the busy office on the BCIT campus. But the achievements of the institute's Technology Centre, celebrating its fifth anniversary this autumn, are far from modest.

After a humble start in 1989, the Technology Centre has developed specialized expertise and facilities in several innovative fields:

The Applied Research in Computer Systems (ARCS) Lab employs six full-time staff who work on software development projects.

The Centre's **Health Applied Research and Development** program provides excellent lab facilities and expertise to support medical devices and other health-related projects.

Media Studio, a centre for multimedia research, development and education, opened its doors to industry and BCIT faculty, staff and students on October 14.

And in June this year, the new **Chemical Engineering laboratory** was completed.

These advancements have enabled the BCIT Technology Centre to turn out some of the province's most exciting developments in the latest

computer software, medical devices, multimedia applications and environmental cleanup.

"We're starting research and development projects in areas we never considered when we opened," says centre director Norman Streat, who's been at the helm since the facility opened.

"With recent projects involving faculty in chemical engineering, forestry, and biotechnology, we've expanded our horizons considerably."

From relatively small one-time undertakings by BCIT students to ongoing major faculty research spanning several years, the centre has overseen hundreds of projects and provided B.C. companies with millions of dollars worth of applied research, advice and assistance.

Without BCIT help, many of the centre's ventures would likely never get off the ground—a contribution Streat is proud of.

Whatever the enterprise, the centre's mission has always been simple: To put B.C. industry together with BCIT's people, equipment and ideas.

A team of 25 researchers, technologists and support staff are at the heart of the centre,



BCIT Technology Centre staff line up to greet new challenges.

Bert Schendel photo



Norman Streat, director, Technology Centre

working with local universities, other research organizations and companies large and small to do just that.

Results have been impressive.

Hospitals across Western Canada have improved efficiency and saved money with special scheduling software jointly developed by ARCS Lab and Kelowna General Hospital. Namtai Electronics created a new wrist-watch blood pressure monitor with help from the centre's Health Applied Research

& Development program. A new genetic test to combat game poaching was devised by faculty in the biotechnology program for Helix Biotech.

Companies aren't the only ones to find a windfall in the technology centre, though. BCIT's faculty and students have benefitted too.

"BCIT wants to provide its students with world-class training for career success," says Streat. "That means we have to

give our instructors the opportunity to stay close to what is going on in industry, and give our students real-world problem-solving projects which demonstrate that they can meet the challenge of today's job market."

—from Stephen Barrington and Kelly Gervais



Don Guenther with his invention, Flashmaster, a new road safety light.

Gordon Bazzana photo, courtesy of The Kelowna Capital News

New light shows bright future

Don Guenther, a 56-year-old Kelowna resident, has seen the light—and it looks to spell record sales this year.

Guenther noticed that the blinking safety lights on traffic control barricades were often out. An investigation into why revealed that the existing units used very old electronic technology and the batteries were being drained within only a few weeks.

Motivated by his discoveries, Guenther developed Flashmaster, a new road safety light with a tiny circuit board and LED light that is at least eight times more efficient than others on the market.

After spending 18 months developing the light, Guenther's fledgling company in Kelowna, B.C., needed to do some field tests to

verify his claims. For that it turned to BCIT's Technology Centre.

The tests were performed by Stephan Smolar, assistant instructor in Electronics Engineering Technology, and confirmed that the light uses far less energy and creates higher intensity.

"This is just the kind of project we like," says Peter Thomson, Manager of Industrial Assistance for the Technology Centre. "A little help from us to get the company over a last hurdle, and they have taken off."

For highways departments, utility companies and others who use the sawhorse-like barricade lights for traffic control, the new flasher should mean greatly reduced operating and servicing costs.

Sales of the Canadian-made light are expected to top \$550,000 for 1994, with orders coming from across North America.

—from Stephen Barrington and Kelly Gervais

New dessert nets equipment for BCIT



When Blis International Inc. wanted to develop a new non-dairy frozen dessert, they approached the Technology Centre to investigate the possibility of using lab space at BCIT. The food processing pilot plant proved to be the ideal location for the project except for the absence of an ice cream freezer.

Blis proposed a trade—the needed ice cream freezer for the use of the pilot plant for the duration of the project. The project is expected to be completed in November. At that time the freezer, worth \$7000, will become the property of the Food Technology program.

"We hope to incorporate the freezer into the classroom with a three-hour lab in the food processing program," says instructor Anne McCannel. "It will also be extremely useful to many students with their directed studies projects."

Although this is the first time the program has accepted equipment as payment for lab space, it's an arrangement the faculty is happy with. In addition to the obvious benefits to the Food Technology program, an ice cream freezer could also come in very handy once the hot weather returns next spring.

—from Kelly Gervais

SPECIAL BCIT TECHNOLOGY CENTRE EDITION

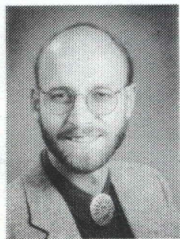
A network of resources

One of the Technology Centre's goals is to be a resource centre for the B.C. business community providing information and services in as many different areas as possible. Over the past five years the centre has developed several alliances with specialized organizations that share similar objectives.

The following representatives are located on campus and are available as a resource to faculty, staff, students and industry.

The Canadian Patent Office

Last year the Technology Centre agreed to a request from the Canadian Patent Office to provide office space at BCIT for

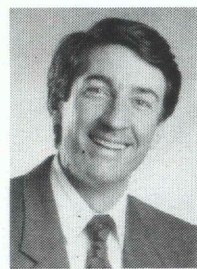


Sean Irving

its Vancouver representative, **Sean Irving**. Irving provides information and advice to the general public on the patenting procedure. He is located in NE25 with the Venture program and has been an excellent resource for the Venture students and small business people who visit the Technology Centre for information and advice.

Assistive Devices Research & Development

When the Ministry of Employment and Investment started an initiative to encourage research and development in



Phil Mundy,
project manager
for Assistive
Devices
Research &
Development

assistive devices for the elderly and disabled, the BCIT Technology Centre was the perfect home for project manager **Phil Mundy**. The relationship has been extremely beneficial to BCIT in that it has created excellent applied research opportunities for the Technology Centre and BCIT faculty and several very successful student project opportunities in the assistive devices area.

Provincial Ministry of Agriculture, Fisheries and Food

As a result of a new initiative of the B.C. Ministry of Agriculture, Fisheries and Food to facilitate increased competitiveness of the B.C. food industry through new

technology, **Debbie Hellbach**, food processing specialist, has been located on campus through the Technology Centre. Her office is presently located on the third floor of NE25.

Debbie
Hellbach



The Ministry saw the Technology Centre and BCIT's Food Technology program as excellent vehicles to assist in broadening the awareness and implementation of new technology by the food manufacturing industry. BCIT's Food Technology Lab has been involved in several applied research projects in the past. The new alliance with the Ministry of Agriculture is expected to create more opportunities for the future.

Quality Resource Centre

The Technology Centre will be receiving funding for a proposal developed by instructors **Louise Routledge** (Mathematics), and **John Lloyd** (Operations Management), to establish a Quality Resource Centre for B.C. The Centre will provide information to businesses on the



Instructor Louise
Routledge
(Mathematics)



Instructor John
Lloyd
(Operations
Management)

subject of Quality Management and will open its doors on BCIT's Burnaby campus this November. The centre will also provide faculty and staff with applied research opportunities in the growing field of Quality Management.

National Research Council (NRC)

BCIT's association with the NRC represents the longest and one of the most beneficial alliances the Technology Centre has developed so far. For seven years BCIT has provided a home in the Technology Centre office for two Industrial Technology Advisors for the Industrial Research Assistance Program (IRAP). These representatives provide technical assistance 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 position is rotated among BCIT instructors on a yearly basis as a professional development



Nick Fong,
Industrial
Technology
Advisor



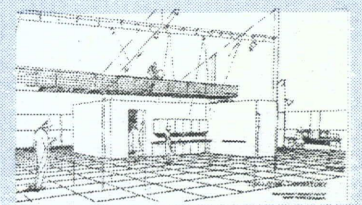
Ron Wlock,
Industrial
Technology
Advisor

opportunity. **Ron Wlock**, from Operations Management, just completed a one-year term and returned to teaching this fall.

Wlock says his year as ITA was an experience he will always remember. "I had the opportunity to interface with hundreds of

companies in my field during the year I spent with the Technology Centre," he explains. "The experience was terrific for my professional and personal development and will definitely help me when I'm back in the classroom this year."

Although sad to see Ron Wlock go, the Technology Centre



THE LIVING LABORATORY

Every year many older and disabled people become dependent on family and friends or move into care facilities because of the way their homes were designed.

The height of cupboards, location of appliances, size of bathtubs and number of stairs are all things that can cause difficulty in everyday routines.

With a view to solving these problems, the BCIT Technology Centre and Simon Fraser University are in the process of developing the Living Laboratory, a large open facility that resembles a movie set, and will contain full-scale rooms or even entire suites to create real-life settings.

In the Living Laboratory, manufacturers of assistive

devices for the elderly and disabled will be able to pretest products, and architects and developers will be able to assess and modify their designs before construction. But most importantly, seniors and disabled persons will benefit from the creation of age- and disability-sensitive environments and products.

It is hoped that the Living Laboratory will be located in the new Downtown Education Centre, which is scheduled for completion in the fall of 1996.

--from Kelly Gervais

welcomes Ted Marchant as his replacement for 1994/1995.

Past faculty ITA representatives have included:

Steve Dudra, Business
Owen Edwards, Engineering
John Emes, Health
Erwin Bublitz, Trades
Richard Beketa, Electronics

—from Kelly Gervais

PROJECTS, PROJECTS, PROJECTS!

With 40 odd projects in progress, the Technology Centre is involved in applied research in a wide variety of areas and involving faculty and staff from many of BCIT's programs.

Projects currently on the go include:

Print Quality Inspection—MacMillan Bloedel

Developing an automated process for measuring the printability of paper.

Electronic Patient Data Collection—Shaman Systems

Developing an electronic method of collecting patient/physician encounter data to increase the quality of medical care and standardize data for research purposes.

Organic Waste Disposal—ADT Waste Systems Inc.

Testing an industrial process which rapidly turns kitchen waste into garden fertilizer.

Culture of Western Yew Trees—TPL Phytogen Inc.

Investigating the potential for cultivation of the Western Yew tree, main source of the drug taxol used to treat ovarian cancer.

Ultrasound Lithotripter—CREDO Group Inc.

Testing a medical device which, as an alternative to surgery, uses lasers to destroy kidney stones and gall stones.

Aircraft Corrosion Videodisc

Creating a comprehensive visual database, stored on videodisc, to be used as a training tool for detection, treatment and prevention of aircraft corrosion.

Super-charged Seeds—Agrologic

Developing a new method of germinating seeds that conserves vast amounts of water and accelerates the life-cycle of the plant for use in reforestation, agriculture and horticulture.

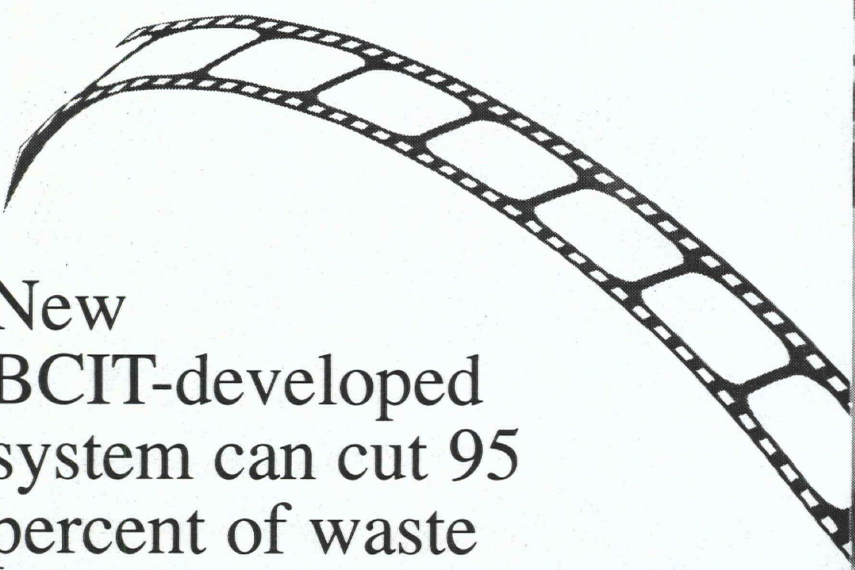
—from Kelly Gervais

Exciting upcoming projects:

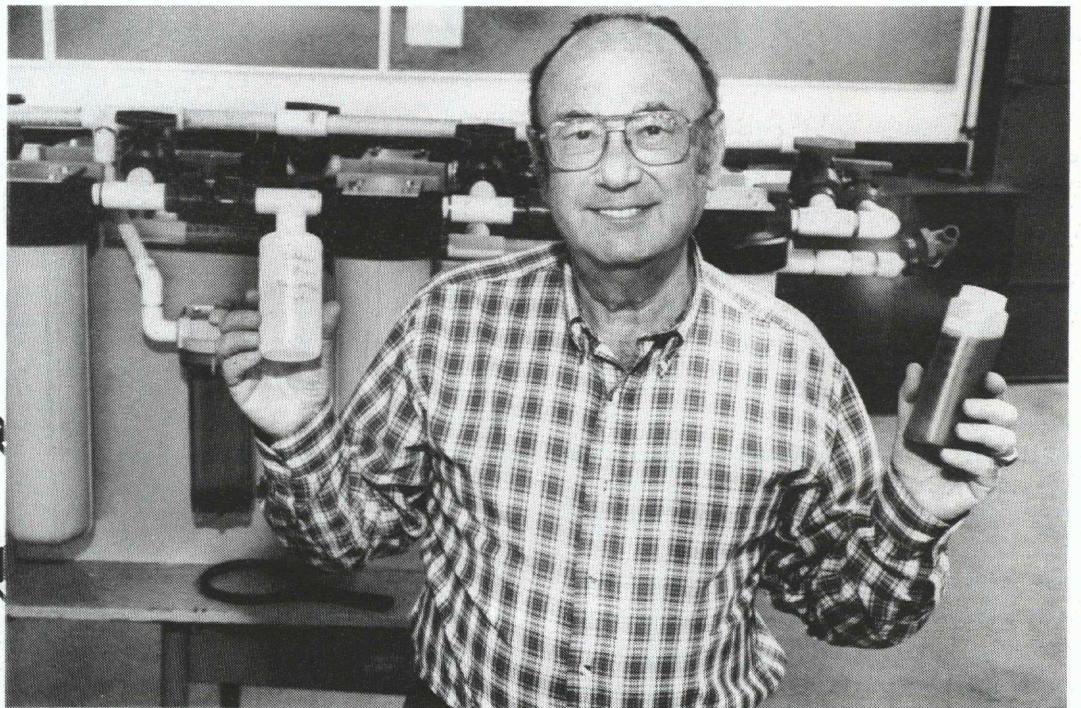
- Assisting a small company with a fuel conversion process for diesel engines that improves fuel consumption and creates less exhaust gas emissions.
- Investigating the possibility of extending the shelf-life of the root Ginseng with modified atmosphere packaging.
- Converting an outboard engine to burn hydrogen fuel for the Nanaimo to Vancouver bathtub race in June next year.

SPECIAL BCIT TECHNOLOGY CENTRE EDITION

Picture this:



New
BCIT-developed
system can cut 95
percent of waste
photo-finishing chemicals



Georger Arato displays before and after containers of photo-finishing waste.

A new super-efficient filter system that all but eliminates chemical waste from photo-finishing operations has been developed at the Technology Centre.

Able to connect to virtually any in-store photo-processing machine, the array of special filters removes the harmful chemicals to leave clean water, which can go down the drain.

This means 95 percent less chemical waste for disposal.

"Everyone said it was pretty much impossible to do such

treatment on-site at individual processing machines," explains George Arato, the BCIT chemical engineer who worked on the project with the school's Technology Centre and principal project sponsor London Drugs.

One unit is now undergoing trials at a London Drugs photo-finishing lab on Vancouver Island, and if successful the company will consider installing the units throughout its in-store photo-finishing operations.

Looking for a better way to handle the waste chemicals

coming from its photo-finishing labs, the company brought the project to BCIT's Technology Centre in 1990.

Specific details of the treatment can't be revealed—patent applications are pending—but Arato does say that developing it wasn't easy.

"It's not too difficult to take out half the chemicals, but that isn't much good," he says, noting that environmental regulations are anticipated for the photo-finishing industry in the future.

With photo-finishing waste essentially a soup of 20 or more chemicals, Arato's treatment system went through so many refinements he eventually lost count.

Supported by London Drugs, the Science Council of B.C. and the National Research Council of Canada, the project was about 3½ years in the works and should mean significant environmental benefits.

So much so that London Drugs is looking at the possibility of

manufacturing the systems for sale to others.

No stranger to tough environmental projects, Arato started focusing on such work about 15 years ago with a PCB cleanup operation. Now with the photo-finishing project complete, he's already moved on to another venture: how to better treat the outflow from pulp and paper mills.

—from Stephen Barrington

WHO IS PETER THOMSON and why is he smiling?

The automatic pet-food dish he can work with. But plans scrawled on paper towels are another matter.

At the Technology Centre Peter Thomson has seen ideas good—and otherwise—come to his office. It's his job to manage the Centre's industry-assistance program, putting student and faculty expertise to work helping fledgling technology enterprises.

The centre has helped bring hundreds of ideas from drawing board to production, providing several hundred thousand dollars worth of advice and assistance over the years.

Just a handful of the recent projects Thomson's office has overseen: A new multi-terrain wheelchair, a vastly improved coupler/fastener called the Fastenator and hair's width

precision measuring needed to make the steel frame for the world's largest optical telescope.

"Our specialty is projects that others can't take on," says Thomson, who can recall the occasional inventor presenting him with drawings that look as if they were used to wipe up the morning's coffee spill.

"A good idea is only part of the battle—but it takes expertise to bring that to fruition. If there's a promising venture, we can provide that expertise where a company might not have the resources to."

After starting modestly five years ago, the centre's industrial-assistance arm is now fielding as many as 15 project inquiries a day, with its popularity expected to keep growing.

Now, about that automatic pet food dish: At this point the

*"Our
specialty is
projects that
others can't
take on"*

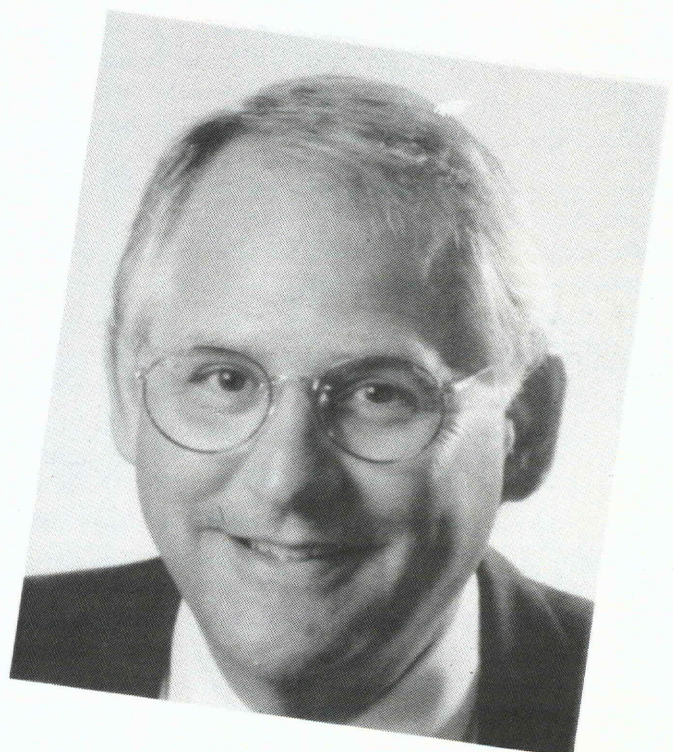
prototype is still more a conversation piece than anything else. An eye-catcher on Thomson's bookshelf, it's a cleverly simple gadget with a feather-touch lever that the critter

stands on to flip open the lightweight plastic lid, which keeps the food moist and bug-free.

So far Thomson is still looking for faculty or students to take the

project on for refinements and a possible marketing study—so don't go scouring stores quite yet.

—from Stephen Barrington



Peter Thomson is manager of industrial assistance at the Technology Centre.

Keeping the bugs alive

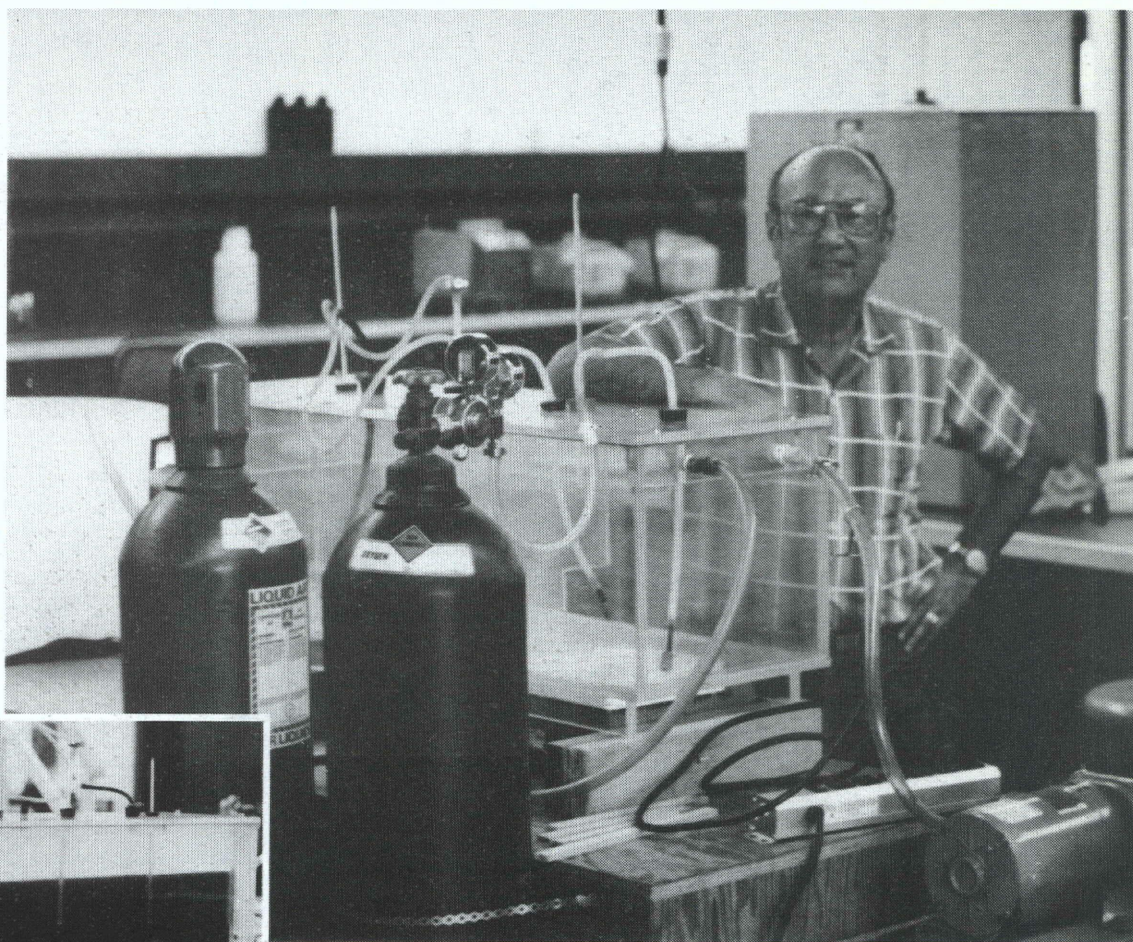
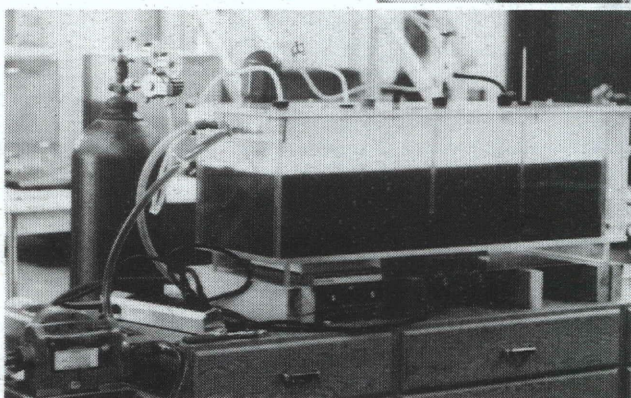
Keeping the bugs alive is what George Arato, chemical engineer with the Technology Centre, is trying to do in the centre's new Chemical Engineering Lab.

In reaction to government regulation and environmental concerns, Howe Sound Pulp & Paper became one of several companies who switched from chlorine to hydrogen peroxide for bleaching. After the switch, their treatment plant had to be shut down several times because tests showed that the effluent from the hydrogen peroxide process was killing the microbes that eat the harmful compounds, and the effluent was no longer meeting government regulations.

The research began as a student project in the Pulp & Paper program. Howe Sound Pulp & Paper provided the materials and effluent for a group of four students to set up and run a model UNOX plant. UNOX is a process which uses Union Carbide Oxidation to treat effluent in a relatively compact space.

A model UNOX plant is now up and running in the Technology Centre's Chemical Engineering Lab. It is widely believed that

George Arato with his model UNOX plant.



hydrogen peroxide is causing the problems but early indications suggest that other associated chemicals could be playing an important role.

George Arato is working with Paul Lummerding, a work study

student, and Dr. Chris Nicol, part-time BCIT instructor, to investigate various possibilities. The team has already made some significant discoveries and are optimistic that several solutions

to the problem will become clear in the near future.

If Howe Sound Pulp & Paper goes ahead with support for the project, the next phase will involve testing the proposed

options to find a practical solution to this important environmental problem.

—from Kelly Gervais

The University of British Columbia was four years into the Computerized Driving Assessment Module (CDAM) project when they approached the Technology Centre in January of 1992. "UBC didn't have the skills and resources to take the project to the next phase," says Dr. David L. Johnson, Interactive Video Disc project leader at the Technology Centre.

"At that time, they had developed a prototype, but it was text-based, not video-based, and gave no sensation of actually driving," he explains.

BCIT's role was to introduce video to the project and mechanical feedback through steering resistance and vibration simulation. The changes created a visual experience very close to that of actually driving and enabled measurement of real reactions. This phase was completed by the end of 1992.

The next phase involved the product's commercial potential. In order for the product to be commercially useful, it needed to be user-friendly. "We responded to this requirement by reducing the number of motions and steps required to run the program," explains Johnson.

Occupational therapists, who assess the ability of people with head injuries, were identified as the number-one target market.

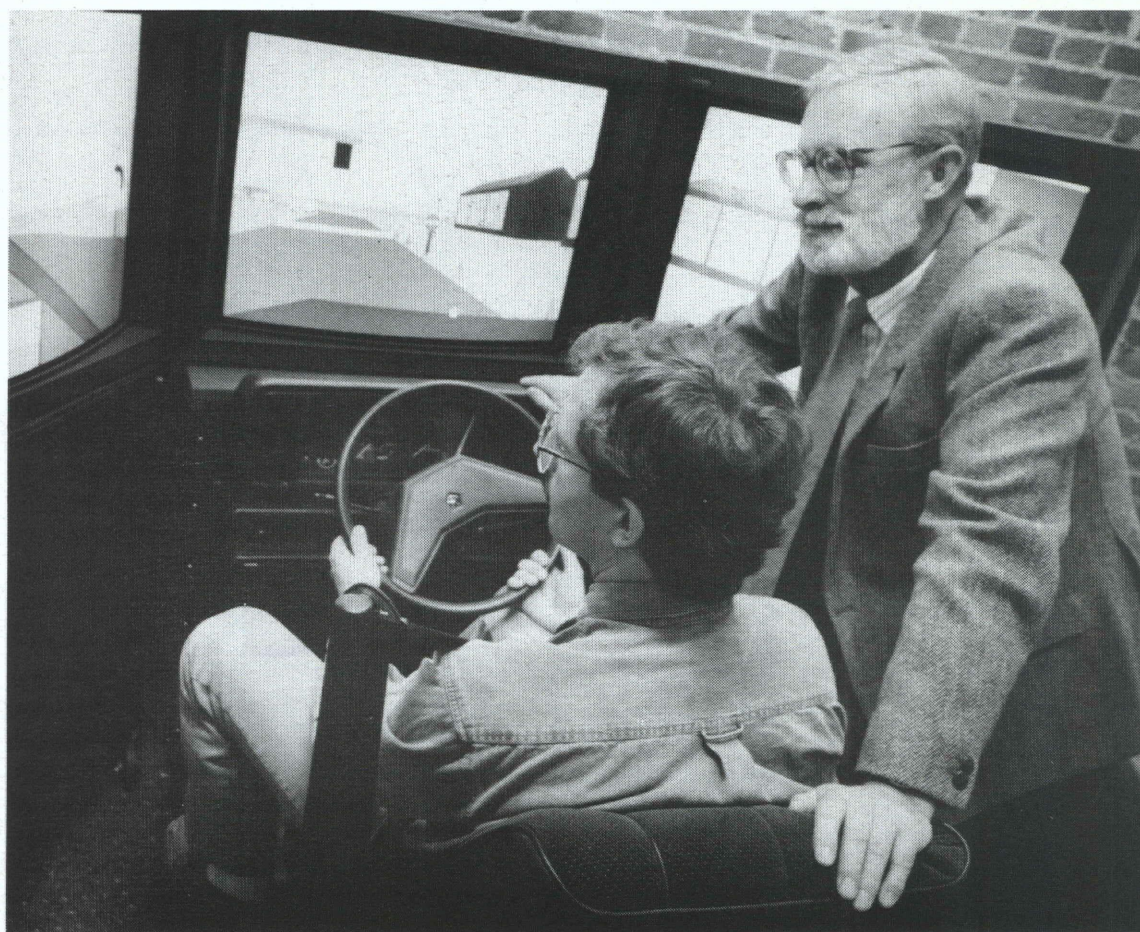
A report generation feature was then added. With this feature, the product now has the ability to produce a report on each patient tested. "The performance report tabulates statistics on the control of speed, steering and response time," says Johnson.

With the newest partner in the venture, Community Therapists Inc., a well established private practice occupational therapy firm, the Technology Centre is now conducting tests on both injured and non-injured subjects to create a database of reports. These reports will provide data to determine key indicators for evaluating driving capability, such as what specific functions or reactions are common in severely injured patients.

"This database will be tremendously helpful in evaluating future patients," says Johnson. "And better evaluation techniques will help some of the disabled persons who face isolation because they are not currently permitted to drive."

—from Kelly Gervais

New assessment tool predicts actual driver behaviour



The Computerized Driving Assessment Module (CDAM) creates a visual experience close to that of actually driving.

Technology Centre on the cutting edge

The Technology Centre has recently helped take the guesswork out of avalanche prediction. "Our mandate is to help local industry get access to advanced technology," explains Stefan Joseph, B.C. Advanced Systems Institute (ASI) Fellow at the Technology Centre. Joseph, along with Geoffrey Lakeman, former geologist and BCIT graduate, have been working on an Avalanche Prediction System with Dr. Dave McClung of the University of British Columbia, and the Ministry of Transportation and Highways.

The expert system is used to assess the avalanche risk by analyzing the snow profile to determine stable and weak layers. "This is definitely not intended to replace the forecasters," insists Joseph. "Instead, it is meant as a decision support system that will support forecasters' work and increase their confidence level."

Avalanche forecasting is a physically challenging job, often with long, stressful working hours. "Fortunately the computer doesn't get tired, and this results in consistent and accurate data," says Joseph.

"Ultimately," explains Lakeman, "the system helps make the decision to close a road and to drop the explosives that will trigger an avalanche at a safe time. Feedback from avalanche experts who have tested the system shows us that it tells the forecasters the same things that the experts would say."

Joseph and Lakeman's work included knowledge acquisition sessions where they interviewed the domain experts: avalanche technicians, forecasters and researchers in the area. "During these sessions it became clear that the domain experts benefit from the knowledge engineering process," says Joseph. "Some of the ideas that we used to extract their knowledge are tools that they may now use in teaching newcomers."

The system will be tested at 10 sites across B.C. this winter. "At this stage the system is meant for the entire province, but it has worldwide potential," explains Lakeman. "It could also expand into the recreational field, in fact, several helicopter ski operations have already expressed an interest."

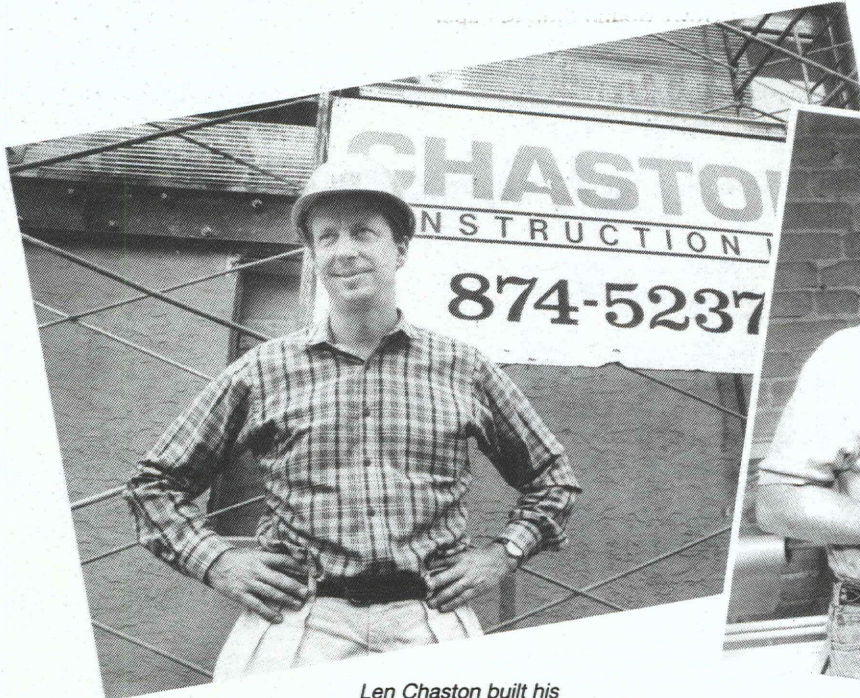
—from Sheila Rees



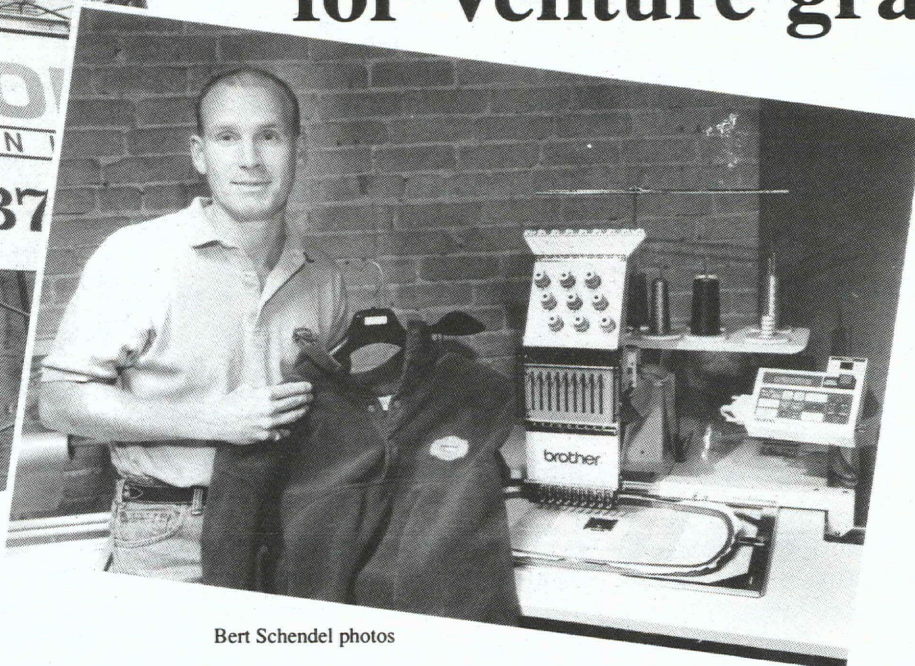
Analyzing the snow profile.

The Avalanche Prediction System takes the guesswork out of predicting avalanches.

Business booming for Venture graduates



Len Chaston built his business from the ground up.



Jack Cantwell—stitching his way to success.

Bert Schendel photos

BCIT's Venture program helps entrepreneurs get their business ideas up and running. Len Chaston of Chaston Construction Ltd. and Jack Cantwell of the Main River Company are just two of the program's successful graduates. Chaston participated in 1986, the program's first year running, while Cantwell graduated this past April and has already moved into new office space in Vancouver's trendy Yaletown district.

Both men were firmly committed to going into business for themselves when they began the program. Chaston, a BCIT graduate in Building Technology, was in the process of starting up his own business when he noticed an advertisement for the program

in the newspaper. "I was interested in running a conventional business with basic principles and I wanted to confirm this by going to the Venture program," he says.

Chaston Construction has since grown by leaps and bounds, handling tenant improvement projects, new construction, service and renovations. Some recent undertakings include construction of a double-decker open driving range at the Musqueam golf course, and renovations to Saint Mary's Church.

Cantwell, a consultant in the oil industry for 10 years, had been considering going into business for a couple of years when he decided to bring an established East Coast wholesale clothing business to Western Canada. "I

purchased the rights from the company, so I had the initial advantage of a chosen product line and brand-name recognition, but I still had to market the product and establish a clientele."

Both Chaston and Cantwell were running their businesses during the program. Chaston had a partner who maintained Chaston Construction Ltd. while he went to school. Cantwell started up the Main River Company while attending the program, learning as he went along.

"I changed my route about half-way through when I realized that it was going to take a lot longer to get it off the ground," says Cantwell. As a result of this

realization, he was able to shift gears and make some changes, including buying the embroidery equipment that allowed most of the work to be done in-house.

The program is concentrated into three months, so these types of changes are possible without wasting huge amounts of time or money. According to Chaston, this time frame is good because, "If you cannot get it together in three months, maybe it's telling you something."

Participants come to the program with all sorts of business ideas, and everyone gets something different out of it. "For me," explains Chaston, "the greatest benefits were the exposure to marketing and accounting ideas, the business plan, and a solid

background in computer skills."

Cantwell credits the program for his business planning skills. "The Venture program taught me how to formulate a working business plan; I can't see myself having done the plan without having taken the program."

Both Chaston and Cantwell are enthusiastic when talking about the future. Chaston plans to make the move from contractor to developer, and Cantwell is expanding in-house equipment with hopes of opening a retail operation. Although both entrepreneurs say it was a lot of work, neither one has any doubts about the direction they have chosen.

—from Sheila Rees

Women in Technology lunch series kicked off

On Wednesday, October 6, students, staff and faculty met for an informal session with guest speaker Jean Cockell, at the first Women in Technology brown bag lunch series.

Cockell, associate dean of Academic, Adult Basic Education and Adult Special Education programs at the King Edward campus of VCC, spoke on women in non-traditional roles in the education system. "It is one thing to do something logically; it is another to do it in the environment surrounding you," explained Cockell, while discussing the pressures that women face when they take on a non-traditional role.

Cockell spoke from the perspective of a student, instructor and an administrator. She discussed why women choose non-traditional roles and why they want others to get involved in the same things. And she spoke about the non-traditional choices that she has made in her personal life, including her decision to go back to school for a master's degree at age 40.

The session was conducted in a workshop style, which allowed

the participants an opportunity to network with one another. "Networking and finding people can help make you feel safer and stronger in your choices," says Susan Parker, second-year student in BCIT's Biomedical Engineering Technology. "The brown bag series is a good way of hearing about, and meeting women who are in positions of power or authority in the workplace."

Initial feedback for the lunch series is positive. Jeannette Arthur, second-year student in Biomedical Engineering Technology and vice-president of Student Affairs, was impressed with Cockell's talk. "It is really encouraging to hear a woman in a position of authority who is using her power in a non-traditional way, not only enjoying it, but also succeeding at it."

The brown bag series will continue on the first Wednesday of every month. Participation is encouraged, and it's a great opportunity to meet students, staff and faculty members.

—from Sheila Rees

Science & Technology Week activities

To celebrate Science & Technology Week, October 14 to 23, BCIT will be involved in the following events:

Grades 6 & 7 Tour Day October 18

Be extra cautious as you drive on campus, as 500 students aged 10 to 12 are expected to tour the Burnaby campus between 0930 and 1215. (Registration is full for this event.)



Celebration of Success Luncheon and Entrance Awards Ceremony October 19

BCIT will recognize some 120 first-year BCIT students for outstanding academic achievement. Awards include Canada Scholarships, President's Entrance Awards, Alumni Entrance Awards and Industry Sponsored Entrance Awards.

School of Engineering Technology Update Session October 21

Hosted by BCIT's School of Engineering Technology, this all-day session for high school counsellors will help familiarize them with BCIT programs and career opportunities for high school graduates.

Catalyst '94, Books, Education, Science & Technology October 21, 22

BCIT will participate in this joint conference of the B.C. Science Teachers' Association and the B.C. Teacher-Librarians' Association, held at Burnaby South Secondary School.

Science Journalism Workshop October 22

BCIT will host the joint Ministry/Canadian Science Writers Association-sponsored Science Journalism Workshop. It will provide a forum for Grade 9 and 10 students to test their skills in science journalism.

Richmond Science & Technology Showcase October 22, 23 Richmond Mall

BCIT's Sea Island campus will participate with a display on aviation programs, along with general program information.

Multimedia cont. from page 2

their typical classrooms," explains Fenrich. "For example, clips were included for safety reasons (e.g. chlorine experiments), availability of materials (e.g. liquid oxygen), and extreme danger (e.g. military explosions). These clips definitely motivate students!"

Aside from multimedia's motivational value and learning enhancement potential, there are other practical reasons why this technology is growing as an instructional tool. "We develop multimedia materials to solve instructional problems," says Fenrich. "For example, if a teacher demonstrates how to take apart an aircraft engine, there would be a dozen students craning their necks to see what's happening. When the teacher takes a moment to explain something to one student, there could be another student making a critical mistake that is not

detected. A barcoded videodisc solved this problem. Students can instantly see short clear video clips of each procedural step. Now the task can be done quickly and error-free."

Despite all the potential, Fenrich recognizes that multimedia isn't appropriate for everything. "Some things shouldn't be put on a computer because they're being done just fine as they are," he says.

The Interactive Media Lab, together with the ARCS lab and Technology Centre, will support internal projects on a cost-recovery basis. It is, however, desirable that industry be involved to provide some funding. "The prefect project," says Fenrich, "is funded by industry, can be used by industry, is useful to the faculty for teaching, and is marketable."

Although this sounds like a tall order, such projects have been developed and more are being planned:

◆ Denise Nordin, who participated in the workshops, has submitted a proposal to create a tutorial to help learners identify metal can defects.

◆ A recent project, entitled "The Disassembly and Assembly of the Allison 250-C20 Gas Turbine Engine" is being actively marketed by Avotek, who have guaranteed royalties which cover the project's cost.

◆ A current project entitled Aircraft Corrosion, which includes more than 1,000 video images, will similarly be marketed by Avotek. These royalties will be used to fund future projects.

—from Ruth Raymond

Recreation and Athletics

Juggling



Wednesdays, October 19 to November 9
1130-1215
NE1-345

Mt. Washington



December 18-20

\$160 ski package includes group races, barbecue, three days of skiing, two nights hotel accommodation, one hour lesson and transportation.

To register for any of these programs call 432-8613.

BCIT Staff Fitness Incentive Program

Here's an opportunity for all staff members to be rewarded with T-shirts, sweat shirts, track suits, gift certificates and many more prizes for their efforts to get fit and keep fit. Any of your fitness activities on or off campus such as aerobics, walking or jogging can earn points—each activity is worth one point. For more info, contact Gloria at 8287.

United Way donations climb

The total donation at time of printing is just over \$20,000. We're well on our way to meeting this year's goal of \$40,000.

The Quack-a-thon netted \$2,690.66; the management raffle produced \$124; button and T-shirt sales so far are \$75; and total pledges are more than \$17,000.

The recent draw for one year's free parking (worth \$60) was won by Craig Cowan, an instructor in the School of Electrical and Electronic Technology.

The following opportunities to participate in the United Way "Count on us" campaign are still to come:

Casual Day, October 21

For only \$5, you can relax in the comfort of your faded blue jeans. Buy a Casual Day button from Mary Murray (8410), Lisa Pedersen (8433),

or the person in charge of T-shirt sales in your area.

Looney Draw

Take every chance you can to tape a looney to a looney draw entry form. The more you deposit, the more chances you'll have at super prizes to be drawn at the wrap-up event, October 31.

Chili Dog Sale, October 27

If you're feeling the chilly fall weather approaching, here's a chance to warm up with delicious hot dogs for lunch. You'll warm your heart too, because proceeds go to United Way. Check it out in SW3 Rm 2080 from 1045 to 1330. For \$1.25, you can get a plain dog; \$1.75 will buy a chili dog.

T-shirt sales

You can wear the latest in trend-setting T-shirts for only \$10. Get yours from one of the following people:

Lisa Pedersen in Student Services (8433); Mary in the Admin Building (8410); Brigitte in the Library (8360); Joan in Finance (8392); Sandy in the School of Trades (8377); John Edwards at Sea Island (278-4831); Cathie at Kaslo (439-4100); Vicki in SE6 Business Department (8611); Shirley in Purchasing (8397); and Rory at Part-time Registration (8722).

Wrap-up Cruise, October 31

Who's your favourite Gilligan's Island castaway? Ginger? The Professor? Gilligan's monkey? Put your costume together now and you could win a special prize. Staff, faculty and students are invited to the Town Square cafeteria from 1130 to 1330, where a reasonably priced buffet, prize draws, and plenty of island fun await.