ROGERS COMMUNICATIONS CENTRE

# The Digital Edge

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## Partnerships Help Develop Ryerson's World Class High Definition Television Facilities

In a year that saw the release of "Star Wars II: Attack Of The Clones," which was shot using high definition video, and just months after the CRTC Policy Statement that opens the way for the introduction of digital broadcast television in Canada, Ryerson students enrolled in the Schools of Image Arts and Radio and Television Arts (RTA) have access to a plethora of High Definition Television (HDTV) technology. "As far as we can tell this is the largest acquisition of HDTV equipment by any educational institution to this point in time," comments Brad Fortner, Program Director of Operations And Technology for the Rogers Communications Centre. "It's a great way to start off the Rogers Communication Centre's tenth anniversary."

***RTA Faculty Member Richard Grunberg teaching new Panasonic HDTV Camera***

The HDTV acquisition was the result of a group effort between Ryerson and a number of industry partners. Together they have placed seven Panasonic 1080i High Definition camcorders, four non-linear editing systems that are focused specifically on HD editing, and duplication facilities into two of Ryerson's key undergraduate communication programs. The editing systems will make use of Apple's Final Cut Pro software and Pinnacle System's CinéWave HD cardsets which allow the Apple G4 computers to work with the large data bandwidths created by HDTV. The production process involved with using HD equipment for students employs the technology, which mirrors that of the industry.

**CONTINUED ON PAGE 10**

## EMMAs Bring International New Media Experts To The Rogers Communications Centre

In October the Rogers Communications Centre was transformed into a hive of activity as an international panel of judges converged in the centre to judge digital media submissions from around the world on behalf of the prestigious EMMA Awards. Recognized globally as the most esteemed interactive media awards, the 11th annual EMMAs were held for the first time in North America, in Toronto, from October 16th to 20th.

The EMMAs, which acknowledge excellence in digital media content creation, are respected for their independence, impartiality and sole desire to reward excellence. Due to a two-year effort to attract the EMMAs to Toronto, championed by Tom Green of Humber College's School of Media Studies, this year's jury process was hosted by the Rogers Communications Centre on behalf of the Toronto New Media Trainers Alliance (NMT.)

**CONTINUED ON PAGE 2**

**INSIDE THIS ISSUE:**



**SPECIAL POINTS OF INTEREST:**

- *Ryerson continues work in the development of terrestrial television broadcasting. Page 3*
- *Interactive Television Seminar held at Ryerson draws presenters from as far as Korea. Page 4*
- *Ryerson students interact with renowned fractal mathematician via Access Grid. Page 5*
- *A complete television station master control system will soon be installed in the Rogers Communications Centre. Page 6*
- *Smaller Access Grid system developed. Page 7*
- *Rogers achieved a variety of technological milestones during its first decade. Page 9*
- *RTA Practicum project paved way for current HDTV acquisition. Back Cover*

# EMMAs Bring International New Media Experts

**CONTINUED FROM PAGE 1**

Representing a diverse group of talent, thirty-five jurors converged for three full evaluation days at the Rogers Centre, during which, a vast number of assorted backgrounds in New Media were represented. For example, Fawzia Pirbhai, the 2002 EMMAs Jury Chair, is the current Head of New Media at Decca Music Group in London, England while Rodney Hoinkes is the Head of Design Applications at the Centre of Landscape Research at the University of Toronto.

The juror's geographical backgrounds were as different as their fields of occupation. Several jurors, including award-winning designer Jeffery Saddoris, the founder of a design studio, came from California while others traveled from England. Hailing from London, Alisa Barry was this year's Vice Chair of the Jury and she recently set up RavenIsland Ltd, a consultancy specializing in new media development. While Lila Pine didn't travel across the ocean to arrive at the EMMAs, she did walk down the street from the Image Arts building and her presence as a juror representing Ryerson University was greatly appreciated by the entire team.

*Lila Pine, School Of Image Arts (left) judged in the EMMA e-learning category*

Lila Pine, who is the current Program Director for the New Media Option of the School of Image Arts, was asked to join the EMMAs as an evaluator of the E-Learning category. After three intense evaluation days, Pine was impressed by the quality of the work she witnessed. She found that the submissions she evaluated possessed the renowned creativity and imagination that she was hoping to find in the EMMAs. "If I'm going to look at a piece of New Media artwork and judge it on the basis of being innovative, I'm not looking for technology to be used for the sake of technology," Pine reflects, "but I'm looking to see New Media somehow used to shift the ground, to redefine what art is. I found that exact thing when I was judging the EMMAs. The best projects were the ones that were challenging the whole notion of education."

**"The best projects were the ones that were challenging the whole notion of education."**

Education is something that the EMMAs take seriously. While the EMMAs were in town, students were able to benefit from a unique learning opportunity when the Toronto New Media Trainer's Alliance (NMT) announced that they were sponsoring this year's EMMA MasterClass. An integral aspect of the International Electronic Multimedia Awards (EMMAs), the one-day MasterClass event gave students the opportunity to hear from a selection of the world's best experts in Interactive Digital Media. Held at the Bloor Cinema, on Wednesday, October 16th, students attending NMT member schools Centennial College, George Brown College, Humber College, Ryerson University, Seneca College and Sheridan College, were invited to attend the event for free.

The EMMA MasterClass series was launched in 1999 specifically to provide an opportunity for the EMMA judges to share their experience and expertise with young people, particularly students, who are about to join the industry. Fawzia Pirbhai states; "The MasterClass really allows the EMMA judges, many of whom are acknowledged experts in their field, to interact with the local multimedia community. Over the course of a day, one is able to learn about best practices and success stories from around the globe. And since we're webcasting the event, people involved in New Media will also be able to participate via email. It's really quite exciting."

www.emma-foundation.org

EMMA foundation

# Ryerson's Pioneering Efforts in HDTV Terrestrial Broadcasting Continue In Partnership with CDTV

With a digital transmitter located atop the CN Tower and an HDTV equipped master control located in Toronto's CHUM/CITY building, Canadian Digital Television Inc.'s (CDTV) Toronto DTV Test transmitter has become the focal point for HDTV pioneers in Canada. The project, which is operated by an all-volunteer group, was established for the purpose of providing practical experience with DTV.

*Bruce Cowan (left) with Ken Davies*

Bruce Cowan of CITY-TV first put the idea for a Toronto based transmitter forward in September 2000 to CDTV's Technical Working Group, co-chaired by Carol Darling and Lou Montana. "The initial DTV transmitter established by CDTV in Ottawa at the Communications Research Centre was put in place for the scientific evaluation of DTV transmission and reception," said Cowan. "The idea was for a Toronto based test transmitter to demonstrate the capabilities of DTV directly in the boardrooms of various Canadian broadcasting companies, many of which are located right in Toronto."

Getting approval for the project was one thing, however relying solely on volunteers for its completion was something else. Following the September 2000 meeting, Cowan worked closely with Terry Harvey at Ryerson University and Ken Davies, a recent retiree from CBC Engineering for an entire year. Together, the three DTV pioneers managed to bring together the support required to build and equip the transmitter project. With the assistance of a number of companies, all of who leant the project equipment and/or services, the group was able to start transmitting on January 18, 2001. Technological support for the project was secured from Adherent Technologies, Applied Electronics, Bell Nexxia, Broadcast Technology, CHUM Television, CITY-TV, CTV, Digital Vision, Dolby Labs, DVAL, Envivio, Grass Valley Group, Harris Broadcast, IBI Group, Larcan, Leitch, Logic Innovations, Miranda, Panasonic, Ryerson, Sonotechnique, TandbergTV, Tektronix, Tiernan-Radyne-ComStream and Triveni Digital.

Initially, HDTV content was supplied to the ATSC transmitter using a server co-located in the CN Tower. By July, a Ryerson University based master control was operational in the Rogers Communications Centre and experimentation occurred with multicast, COFDM modulation and the transmission of programming directly to PC reception cards. By December, Applied Electronics loaned a Grass Valley PVS 2000 server that allowed HDTV content to be transmitted on a continuous basis. In January 2002, the master control was relocated to Toronto's CHUM/CITY building, where it currently resides.

With the transmitter operational, the direction of the project is shifting toward content. While the project has some HDTV content made available, the broadcasting rights continually change. "It's one thing to get the physical HDTV content, but it's another thing to get the rights to air it," explained Cowan. "Even though we have an experimental license we must respect the owners rights because the station broadcasts over the air and anyone with an 8-VSB reception device can tune into it. So we're constantly seeking approval to place material on the air." he said.

With increased HDTV production in Toronto, producers are becoming aware of the transmitter. Stonehenge Inc., a Toronto based production company, has been particularly helpful in obtaining HD materials for transmission. Also, the recent partnership announcement between Applied Electronics, Panasonic and Ryerson University will result in seven DVCPro HD camcorders, along with an HDTV postproduction capability at Ryerson. With a portion of the equipment aimed at research, the agreement will mean the Toronto group will have an HDTV production capability.

In addition to transmitting HDTV content, terrestrial ATSC transmission offers the ability to deliver data that can form the basis of new services, enhanced television or interactive television. Unlike DTH and cable delivery that can employ proprietary middleware systems, or the MHP standards to deliver data content, ATSC's capabilities in this area are not as well refined.

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# Pioneering Efforts Continue In Digital Television

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Recently, Triveni Digital provided support for the group with their SkyScraper system providing master control with a server environment for collecting, carouselling and scheduling data for transmission. It also includes appropriate ATSC reception devices that can play HDTV, separate data from the transmission stream and play additional file types such as MP3 or MPEG-4.

To develop some demonstrable content, Ryerson's Interactive Broadcast Learning Lab is mentoring the development of an interactive content group. The group includes private sector participants Pangaea New Media, MarbleMedia, Stonehenge, 4th Wall Media and CTV, along with faculty from the School of Radio and Television Arts and staff from the Rogers Communications Centre. Many of these companies and individuals participated with Ryerson in developing iTV content in past research efforts. The group is currently concentrating its authoring efforts on MPEG-4 software loaned to the project by Envivio Inc. MPEG-4 is a new interactive streaming technology that can stream interactive video to cell phones, PDA's, networked computers and digital set-top boxes. It seems a logical choice given increased interest in MPEG-4 from broadcast technology companies and the fact that it maintains its interactivity across a variety of information appliances, including set-top boxes.

# Ryerson Plays Host To Innovations In Digital Television

In mid October Ryerson played host to the "Innovations In Digital Television" portion of the CDTV-ATSC seminars on digital television broadcasting. The seminars organized by the Toronto CDTV test transmitter group (see story page 3) brought together Toronto's broadcasting community who's interest in digital television had grown with recent CRTC announcements that provide a framework for the advancement of digital television in Canada.

The three-day event, which was attended by numerous Ryerson faculty and staff, was centered at the downtown Holiday Inn with simultaneous sessions held on the last day at the hotel and Oakham House at Ryerson. A broad range of topics was covered ranging between engineering principles of digital television, through high definition production techniques to datacasting and interactive television.

*Brad Fortner chaired session on Authoring Content For Interactive Television Services*

Brad Fortner of the Rogers Communications Centre organized the daylong event at Ryerson. He also chaired the afternoon session titled "Authoring Content For Interactive Services". "The conference organizers wanted this particular session to be held at Ryerson for a couple of reasons," commented Fortner. "The committee was keen to have student participation in the switch to digital television and they recognized the knowledge base that has been built up around interactive television content with our Interactive Broadcasting Learning Lab."

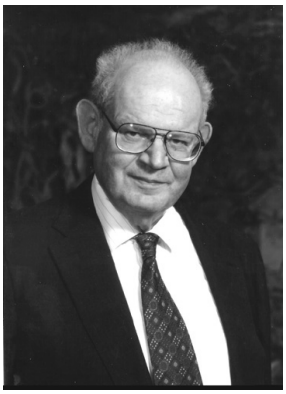
**"Students add a level of energy to these kind of sessions making them very worthwhile to do."**

The afternoon session featured presentations on authoring iTV content for set top boxes, iTV authoring within the television production workflow and opportunities to deliver other forms of media via digital television transmission. Presenters for the session came from far away as Korea and the afternoon featured the first North American demonstration of a DASE iTV authoring system developed for terrestrial use.

Approximately forty students attended from the school of Radio and Television Arts Communicating Using New Media Class, a class that studies the emerging field of interactive television. "We really hit the mark in this session," Fortner added. "It was great to see interaction between our students and some of the leaders in the iTV field. Having these kind of events on campus makes it easy for our busy students to attend. The students add a level of energy to these kind of sessions making them very worthwhile to do." he concluded.

**www.cdtv.ca** **www.rcc.ryerson.ca/ibll**

# Developing Global Threads



**Benoit Mandelbrot renowned fractal mathematician and Professor of Mathematics at Yale University**

A remarkable opportunity was recently presented internationally to both students and the public when they were offered the occasion of interacting with renowned fractal mathematician and Professor of Mathematics at Yale University, Benoit Mandelbrot. In what was the launch of an international art and science faculty project entitled Global Threads, Ryerson students used the broadband Internet connection of the Access Grid to join participants from Germany, France, Portugal, and the United States for a discussion with Mandelbrot.

The Global Threads project is a unique educational series that will feature prominent speakers who represent the highest levels of artistic and scientific disciplines. This undertaking is being developed by several people spanning four countries, one of whom is Dr. Tim Jackson, Associate Professor of New Media in the School of Image Arts and Director of the Synth/Ops Research Group at Ryerson University. Dr. Jackson is the New Media Director of Global Threads and will be developing the online presence of the project. While the individuals creating the program have been invaluable, the journal "Leonardo" has also been an important partner in building this new network of resources and events as it has made its entire archive of publications available for use in Global Threads.

Relying on the applied research the Rogers Communications Centre has invested into grid computing and networked communications, each event will be broadcast through global networks, allowing participants to converse with every speaker. For those who only have access to a lower bandwidth connection, the entire series will also be streamed using RealPlayer.

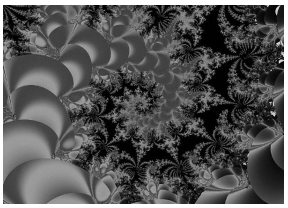
Ben Bogart and Galen Scorer, two of the Ryerson students who participated in the premiere event, say that the experience of speaking with Mandelbrot was one they will never forget. While Mandelbrot is classically known as the inventor of fractal geometry in the science community, he chose to discuss the fractal nature of his musical compositions with the event's participants because of the project's goal to represent the interconnected nature of creativity in both science and art.

By initiating worldwide interaction through global networks, the Global Threads project intends to bridge time, space and cultures by bringing relevant learning to a wider community of learners. Speaker events, such as the Mandelbrot interaction, will be offered twice yearly and will allow students access to a number of high profile individuals.

The Global Threads project is currently in its pilot phase and has plans to evolve into a full program in the year 2005. Dedicated to furthering artistic and creative knowledge, this distinctive collaboration will continue to allow Ryerson students to benefit from the extraordinary opportunity of learning from the world's greatest intellectuals.

# What Are Fractals?

Fractals are everywhere and are those bright, weird, beautiful shapes common to our experience. Many of the objects in nature aren't formed of squares or triangles, but of more complicated geometric figures. Objects such as ferns, coastlines, etc. are shaped like fractals. Fractals are geometric figures, just like rectangles, circles and squares, but fractals have special properties that those figures do not have. Fractal geometry dismisses the Euclidean (geometry that consists of point and line axioms) way of thinking. A mathematician would tell you that fractals are created at the boundary between chaos and order. Computer generated fractals are created using fractal geometry.

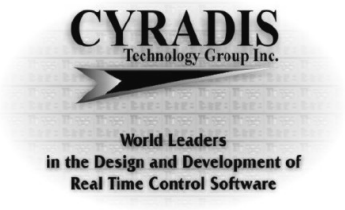


*Fractal Artwork Generated Using Fractal Geometry*

# Cyradis Donates Television Master Control System

Cyradis, who are well known in the television master control space, have donated a complete multi-channel television master control system to the Rogers Communications Centre. The technology planned to be in place by December 2002 will provide a professional level Master Control for Channel 84, the Rogers Centre Community Channel. The technology includes the complete Cyradis Master Control system software, a number of SONY Profile hard drives and the MPEG-2 encoder equipment required to encode programming. The system will be built just inside the doors of Video Post.

Cyradis technology is found in places like the Castle Rock Broadcast Center, Colorado where it's the primary satellite uplink site for DirecTV U.S., DirecTV, Japan a Multi-Channel Broadcast satellite uplink site for DirecTV's Japan operations, California Broadcast Center, Long Beach as a primary satellite uplink site for DirecTV in South America and TCI, Denver, Colorado the parent company of Viewer's Choice, where the system controls their Sony VideoStore Multi-Channel Video File Server System.




Cyradis technology was also used by NBC during their broadcast of the 1996 Atlanta Games and the broadcast of the 2000 Sydney Games. Additionally Cyradis products were provided to NBC for their Genesis project, which was the complete updating of their extensive facilities in New York.

# Triveni Digital and B2C2 Technology Allow For Datacasting Testing

The Rogers Communications Centre has setup and will work with Triveni Digital Corporation's Skyscraper datacasting system. Installed for the first time in Canada, the system allows for data content to be scheduled and transmitted in the ATSC broadcast stream. The equipment has been installed in the CDTV Toronto Test transmitter site in which the Interactive Broadcast Learning Lab is a partner. The Skyscraper system will allow for experimentation with the transmission of various data formats including mp3's, MPEG-4 and various forms of streaming media. The system includes a DataFab that collects, manages and schedules the transmission of data content, a DataHub that allocates bandwidth and inserts data into the broadcast stream, and a DataReceiver that extracts data from the broadcast stream for the end-user.

In addition to Triveni's DataReceiver, the Rogers Communications Centre now has both the PCI and USB versions of B2C2's technology that provides the ability to separate the data from an ATSC broadcast stream. While the Centre has had technology to receive both standard and high definition for some time, the B2C2 technology allows research staff to separate other data types from the transmission and place it on the network for enhanced and iTV applications. B2C2's technology allows for the reception of data types such as MP3 and MPEG-4 via the ATSC broadcast signal.

# Inscriber and Visual Computing Labs Receive Substantial Upgrades

The Rogers Communications Centre's Inscriber and Visual Computing Labs (V-341) have received substantial upgrades over the past few months. There has been increasing use of V-341 by the Media Arts and the Graduate program since it was tailored more toward multimedia usage. Hardware improvements in V-341 include the replacement of CD ROMS with DVD ROMS and an overall upgrading of the OpenGL video cards to NVIDIA GeForce4. The Centre has also equipped all of our Inscriber/Visual Computing labs with Firewire/USB 2.0 cards that allow for the connection of various multimedia (primarily video devices) by students making them much more functional with video and audio

Also this year, the labs have received significant software upgrades. In V-341 the popular Lightwave animation software has been upgraded to version 7.5. The lab has new software including Premiere 6.5, After Effects 5.5 and Illustrator 10. Macromedia's Studio MX has been added to the room. Studio MX includes Macromedia Dreamweaver MX, Macromedia Flash MX, Macromedia Fireworks MX, Macromedia FreeHand 10, and a developer edition of ColdFusion MX. In addition backend Macromedia servers are being added to increase the functionality of Macromedia's popular Flash program.

# Canadian Foundation For Innovation Funds Labs For Interactive Art

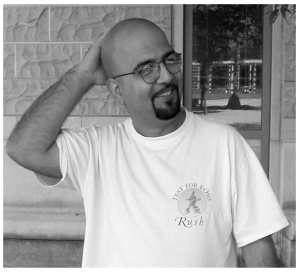
Prof. Lila Pine, along with Dr. Tim Jackson, both from the New Media Option of the School of Image Arts, recently secured a grant of $80 000 from the Canadian Foundation for Innovation (CFI) to be used towards their project called New Media Studios for Evolving Stories as Interactive Art. This infrastructure grant will be used to create a digital studio and interactive environment that will enable the creation and testing of interactive/ remote projects. To that end, the studio will be housed in two locations, one in the Roger's Communication Centre, the other in the School of Image Arts. The infrastructure will enable Dr. Jackson's Synth/Ops Research Group to proceed with more interactivity in a broad array of art applications while Professor Pine will have access to the necessary tools to build complex, interwoven, narrative systems. CFI has traditionally recognized the areas of science and engineering, and both Pine and Jackson are thrilled to have received the first award that CFI has ever offered a communication and design project.

## The Devil Makes Her Own Dessert

Thea Faulds, a recent graduate of Ryerson's Image Arts program and and who is currently employed in the Rogers Communications Centre as our Television Services Assistant was recently awarded an Artist in Residency commission at Trinity Square Video. It was awarded for her to produce a video that dealt with the thematic content of "The Devil in Rock and Roll". The result was an 8 minute work titled "The Devil Makes Her Own Dessert" that deals with the concepts of rebellion and feminism. In October 2002, Faulds traveled to Vancouver to screen her work, which she was able to do as the result of a Canada Council grant to promote her art.

***Thea Faulds***

# Size Does Matter



**Many Ayromlou**

Rogers Communications Centre System Integrator Many Ayromlou is the latest hero of the Open Source Access Grid community. He recently built a single small computer measuring 280mm x 200mm x 180mm capable of replacing the work done previously by three individual computers in Access Grid applications. The computer employs a simple and elegant design and is the talk of the Open Source Access Grid Community. It's the pride and joy of Ayromlou, a graduate of Ryerson's Applied Computer Science Program and he's currently working on a design that may shrink the technology to about the size of a portable CD player. This innovation was a direct result of the Rogers Communications Centre applied research into grid computing and networked communications.

# Toronto New Media Trainers Alliance

Brad Fortner, Program Director, Operations and Technology; Rogers Communications Centre has been elected as the Chair of Toronto's New Media Trainers Alliance. His term that started September 1, 2002 will last for two years. The Toronto New Media Trainers Alliance is a project of SMART Toronto and is made up of both public and private sector educators. Members currently include Centennial College, George Brown College, Humber College, Ryerson University, Seneca College and Sheridan College.

***Brad Fortner***

**www.nmt.org**

# Reflecting Upon The Rogers Communications Centre Turning 10

***"Education is not the piling on of learning, information, data, facts, skills, or abilities--that's training or instruction--but is rather a making visible what is hidden as a seed."***

**Thomas Moore, "The Education of the Heart"**


In reflecting on the Rogers Communications Centre as it celebrates its tenth anniversary, it is necessary to focus on how admirably its seeds grew during these important first ten years. In a decade that defied prediction in the field of communications, rapid shifts in society, business and technology resulted in a constantly changing playing field in which Ryerson's Communication and Design schools had to rapidly adapt. The decade started with the widespread deployment of computer networking. It saw the CDROM become a mainstream consumer item. It gave birth to the rise of Internet as a major communications medium. The digitization of media caused major shifts in business practices. The decade closed with a dot.com crash, leaving those in the financial community wondering what business in digital communications is all about. Despite these many challenges, the Rogers Communications Centre developed and harnessed the advanced knowledge required to be successful during in its inaugural decade.

Much of the Rogers Communications Centre's building design, construction, technical design and installation were seeded by the efforts of many of Ryerson's faculty and staff. When the opportunity first arose for a new building with the Ontario Government, then Ryerson President Brian Segal called together Greer Lavery (Computer Science), Ron Keast (RTA) and John Miller (Journalism) to formalize the concept of the communications centre. At the time, the technology supporting these schools had become antiquated and the new Centre would be built to support and equip the schools with the tools required due to the rapid technological changes occurring in their respective fields.

Once approved, George Hume and Brian Barron, then of Ryerson's Campus Planning, took over the role of coordinating the space requirements and the unique physical spaces required for a modern communications building. Once the three-year construction phase of the building started, Darryl Williams, formerly of Image Arts, was appointed to oversee the technological equipping of the building from an academic perspective. The technical team that designed the technical infrastructure and facilities now found in the building included Ken Woo of CCS, who specified the initial networked infrastructure in the Centre. Brad Fortner –then with Applied Arts—was seconded to lead the planning of all of the video and audio facilities for the building. Finally, CCS employees Don Smith, Wayne Detcher, Greg Martin and Bruce McCleod joined the Technical Installation Planning Group that designed the customized wiring required by many of the broadcast facilities initially found in the Centre.

Although the labs had yet to be completed, the general-purpose classrooms located on the second floor of the Rogers Communications Centre were first used in January of 1992. Most of the Rogers Communications Centre's facilities were obtained during 1991 and throughout the spring of 1992. With limited capital to purchase facilities, industry partnerships were key to meeting the technical requirements of the Centre's schools. ADCOM, AVID Technologies, City-TV, Digital Equipment of Canada, IBM Canada, Image North Technologies (now Inscriber), Imagineering, Panasonic Canada, Roland Corporation, Sony of Canada, Soundmaster Group and Tascam of Canada were among the initial technological partners in the building.

During the summer of 1992 the move into, and the technical build, of the Rogers Centre started. Five additional people including Bruno Boccia, Ken Goodings, Reg Michie, Ian Miller, and John Pugh, all of CCS, were added to the technical installation team. Two students and one cart moved the existing departmental technology into the Centre. Administrative departments, namely Purchasing and Physical Plant, went out of their way to ensure deadlines were met for the Ryerson installation team that had delayed their summer vacation. Manny Ravinsky of Campus Planning, troubleshot the building as it came on-line assisting with hundreds of details in the complex building. With the exception of TV Studio C -which came on-line by the third week in September- all of the labs opened on time with operational technology. All this was accomplished without a single hour of overtime by Ryerson staff. The biggest departmental change occurred in the School of Journalism. The school had gone from six curricular Macintosh computers when they closed in April to well over three hundred in the new Centre when it opened in September.

# Milestones Of The Rogers Communications Centre's First Decade

**1992**
- RCC staff develops "Editly" a PC based video edit control system

**1993**
- RCC demonstrates networked multimedia with PARIS project.
- Darryl Williams recognized as Ryersonian of the Year

**1994**
- RTA television studios completed with significant RCC technological support
- RCC is a founding partner in SMART Toronto Organization

**1995**
- APG development starts with seven multimedia systems and support base in RCC

**1996**
- Digital Media Projects Office established
- Dr. Michael Murphy appointed as RCC Academic Director

**1997**
- Panasonic Canada partnership extension brings DVC-PRO to Ryerson
- Digital Canada Ltd. partnership establishes Visual Computing Lab (VCL)
- SPIRIT (Interactive Radio) launched in Centre
- RCC joins formation of New Media Trainers Alliance

**1998**
- Digital Processing Systems partnership established real-time non-linear editing in RCC
- RCC hosts Canadian launch of WebTV in Centre and CAB forum on Interactive Television
- RCC completes all digital plant by connecting integrating digital EFP, digital non-linear editing, digital compositing and digital animation into a seamless network
- Datacasting Lab established

**1999**
- Mbone production and meeting facility established
- RCC opens Canada's first educational Dolby 5.1 surround sound production lab
- RCC joins Canadian Digital Television Inc. (CDTV)
- CITO Ontario - Baden-Württemberg Research Project funded
- Brad Fortner recognized with Ryersonian Of The Year Award
- Interactive Broadcast Development Group formed to advance study in Interactive Television
- Interactive Broadcast Ontario research project funded
- Ryerson's first DVD authoring and production station established.

**2000**
- TV studio C becomes Canada's first educational 16x9 aspect ratio television studio
- Perfecte, Canada's first student produced HDTV was completed in the RCC

**2001**
- RCC becomes founding sponsor of Liberty Village New Media Centre
- RCC builds and houses the Master Control for CDTV's Toronto Digital Test Transmitter. From it Toronto's first HDTV programs, data content and DVB terrestrial video is transmitted, received and tested.
- TV studio C becomes Canada's first all digital educational 16x9 aspect ratio television studio

**2002**
- Panasonic partnership extension places seven HDTV camera's in schools and provides VTR support for HDTV editing
- SummitFX Inc./Pinnacle Systems partnership establishes permanent HDTV editing technology in RCC
- RCC hosts EMMA Award Judging on behalf of New Media Trainers Alliance
- RCC hosts CDTV-ATSC seminar on Innovations in Digital Television on behalf of CDTV
- DVD authoring environment harmonized to support classroom.
- Cyradis partnership adds Broadcast Master Control facility to RCC
- Access Grid research leads to the establishment of Digital Threads

**A Complete Milestone List Is Available @ www.rcc.ryerson.ca/history.htm**

# Partnerships Help Develop Ryerson's World Class High Definition Television Facilities

**CONTINUED FROM PAGE 1**

"This is a major commitment on our part to ensure our students are fully prepared to work in the HD format," added Fortner. "We've placed three cameras in our School of Radio and Television Arts and three in our School of Image Arts which houses Canada's largest program in Motion Picture production. The remaining camera will be used in the Rogers Communications Centre for research purposes." Having HDTV capacity assists in the Centre's research into interactive TV and conducting tests in conjunction with Toronto's digital test transmitter. "The camera will be used, among other things, to shoot original content to be broadcast on the transmitter that is currently broadcasting HDTV content," Fortner said.

"Using HD cameras is a great, economical way to replace the equivalent of high-level film equipment," added Brian Damude, Chair, School of Image Arts (Film, Photography & New Media) at Ryerson. "More production is going HD and this gives our students the opportunity to produce visually compelling stories, particularly documentaries, in this format."

**"It's very exciting to be able to teach the unique production qualities of HD. It's a whole new way of shooting and storytelling,"**

Those sentiments are shared by Jon Keeble, a professor for the school of Radio and Television Arts: "It's very exciting to be able to teach the unique production qualities of HD. It's a whole new way of shooting and storytelling," he says. "The pictures are just so crisp – tack sharp. Students in the fourth and final year will now have the chance to put together a long-form HD production."

The acquisition of the AJ-HDC20AP model HDTV cameras and videotape equipment was made possible when Ryerson extended its decade-long partnership with Panasonic Canada Inc. That partnership was initially formed with the opening of the Rogers Communications Centre in 1992. In 1997 the partnership advanced the Rogers Communications Centre into DVCPro video technology, providing Ryerson students with the country's first all digital shooting and postproduction environment.

The HDTV partnership extension has yielded support from other industry heavyweights. Applied Electronics, who provides service for the HDTV technology, assisted Ryerson by developing additional partnerships with companies like Canon, who are supplying the lenses for the cameras. RTA faculty member Richard Grunberg also arranged additional industry assistance that was required to put the cameras into the field. It included support from Cartoni Tripods and Precision Camera who supplied tripods for the cameras and Cavision who supplied HDTV lens accessories.

When it came to developing the strategy of how Ryerson's editing technology would work within an academic framework, the team of Attila Jagodits (CCS) and Tina Collier (RCC) came together to sort out the myriad of technical and workflow issues. Having had the experience of both building and systemizing the Rogers Centre's standard definition non linear edit systems, Jagodits and Collier have broken new ground with their innovative and cost effective approach to High Definition editing.

The editing process that they have developed uses offline and online components. It involves three "off the shelf" standard definition Apple G4 Final Cut Pro editing systems, fitted with standard definition DV format videotape. These systems are used to pre-edit material in an offline manner. The fourth G4 Final Cut Pro system, known as the HD conform system, is equipped with a Panasonic AJ-HD150P HD VTR, Pinnacle Systems CinéWave HD cardsets, a terabyte of SCSI disc storage, a 23"Apple Cinema HD display and a Panasonic 1080i HDTV monitor. It will be used as the online system that creates the final High Definition master tape.

**CONTINUED ON NEXT PAGE**

# Partnerships Help Develop Ryerson's World Class High Definition Television Facilities


**Ryerson Faculty and Staff at NAB 2002 Panasonic Acquisition Announcement. From left to right: Many Ayromlou (RCC), Attila Jagodits (CCS), Brad Fortner (RCC), Tina Collier (RCC), Richard Grunberg (RTA) and Clive Vanderburgh (RTA)**

**CONTINUED FROM PREVIOUS PAGE**

Upon completion of their field HDTV shooting, students copy their HDTV videotapes to standard definition DV format using Panasonic technology that maintains a time code reference to the original field videotapes. The dubbing system makes use of Panasonics AJ-HD130DCP HD and AJ-D455P DVCPro VTR's. Once the copies are complete creative editing can occur on any system employing Final Cut Pro. The Rogers Communications Centre has built three Final Cut Pro systems specifically for this purpose while motion picture students can make use of the 20 Final Cut Pro systems located in Image Arts building. Editing can even occur on student owned Final Cut Pro systems.

When the students have completed their offline edits the final HDTV production can be completed in HDTV conform suite. By using the Final Cut Pro project files generated during the offline creative editing process and the original HDTV videotapes, the final conform of the program is an automated process. The approach developed by Collier and Jagodits minimizes hardware costs, mirrors industry practice and allow students to maximize their "creative" time in the offline environment.

Here again, Ryerson found partners to assist with the editing systems. SummitFX Inc., who is the Canadian distributor for Pinnacle Systems, supplied the CinéWave HD hardware. "It was important for us to work with Ryerson because their approach demonstrates a cost effective implementation of HDTV," comments Carolyn Kinzie of SummitFX. "The editing system design clearly demonstrates how cost effective HDTV production can be without compromising the creative process. It's ideal for education. While this approach is a necessity in education because of the tight economics everyone in the broadcast industry can learn and benefit from what Ryerson is pioneering," she said.

Whilst the addition of HDTV technology into the Ryerson's undergraduate schools is new in its 02-03 academic year, the organization has a long history of developing expertise in digital television through its Rogers Communications Centre. The Centre opened Canada's first educational all digital SD 16x9 aspect ratio television studio in 1999. It also worked closely with the RTA students who developed "Perfecte," Canada's first student produced HDTV drama in March of 2000. The Rogers Communications Centre also housed the first master control from which digital HDTV was transmitted in Canada and established the Interactive Broadcast Learning Lab in 1998. The lab focuses on the study and application of interactive television an important component of digital television and HDTV.

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# RTA Practicum Project Paved Way For HDTV Acquisition


Perfecte, Canada's First Student Produced HDTV Drama paved the way for Ryerson's current acquisition of HDTV gear. The project, in which the Rogers Communications Centre partnered, was a "Dramatic HDTV" research project aimed at proving affordable HDTV content was possible. It came to a successful conclusion in early 2000 with a 31 minute TV pilot shot entirely in HDTV format by Ryerson students.

The "Perfecte" team also helped develop several new HDTV post-production systems in cooperation with eyeon Software and Boxx Technologies. In addition the planning of the program included the development of a weekly online interactive subplot designed to add suspense to the drama that would be made available on the shows website. Its purpose was to be used as a teaser to entice viewers back to the next episode. After a successful screening in HDTV in April at Ryerson's Eaton Theatre, "Perfecte" was part of the NAB 2000 conference in Las Vegas. A complete online diary of the production, as well as HDTV stills and other information is available at www.rcc.ryerson.ca/ibll/materials/perfectewebsite.pdf

*The Rogers Communications Centre is a part of Ryerson University and is Canada's premiere facility for degrees, research and professional development in the fields of electronic media and digital communications. New Media at the Rogers Centre is about converging interactive communications and technologies: with the schools of Journalism, Radio and Television Arts, Image Arts, and Computer Science converging in one facility. The many aspects of digital communication—aural and visual, art and science, student and professional—all meet in a dynamic hub of design, academic study, research, and activity.*