


## Network build nearly complete

# GTAnet reaches key milestone

 GTAnet - Canada's newest community-based research and education network - is virtually completed and members are now in the final test mode for their connection to ORION and the global research grid.

With 180 kilometres of fibre for the actual segment runs, and 640 kilometres of fibre when multiple strands of fibre on some routes are included, the network - a consortium of 12 institutions scattered throughout the GTA, is one of the largest regional R&E networks in the country.

"We are in the very final stages of our fibre build with 11 of 12 institutions now having received GTAnet fibre. We expect the final link to be completed and tested by mid-November," says GTAnet Chair Bob Gagne, York University CIO.

GTAnet, created primarily to connect its members to ORION and to the CA\*net 4 national backbone, connects its members using fibre acquired from Group Telecom/360 Networks to one of two connection points - one at

the University of Toronto in the south or at York University in the north.

The new network reached its first major milestone on October 7, when the University of Toronto established the first production link with GTAnet, and the network began transitioning all members. The Ontario College of Art and Design was connected on October 15, and Ryerson University is going live October 26.

Other members are either still awaiting delivery of upgrades to their networking equipment to accommodate the gigabit bandwidth of the GTAnet connection, reconfiguring their network gear or are testing, says Eugene Siciunas - the University of Toronto's Director Computing and Network Systems.

"GTAnet is striving to assist its members to get connected and hopes to have this complete by the end of the year," he says.

York University, which hosts an ORION PoP, has been connected to ORION and thus to CA\*net 4 since early last year. Sunnybrook and Women's College Health Sciences Centre are connected to ORION via the gigapop at UofT, and thereby have access to CA\*net 4 as well.




"With the network complete, the attention of all members is going to turn to promoting the potential for the network within their institutions," says Gagne. "For GTAnet the near term priority will be to create processes and opportunities to bring in new members to grow the reach of GTAnet and ORION."

Along with the five institutions mentioned (Sunnybrook, UofT, Ryerson, OCAD and York) the other seven founding members of GTAnet include Baycrest Centre for Geriatric Care, Centennial College, George Brown College, Hospital for Sick Children, the Humber Institute

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## NECTAR – sweet news for research in distance collaboration



 Collaborating over distances is becoming more common, even essential, in business, manufacturing, research and education. But the technology for distance collaboration has a long way to go to capture the nuances of non-vocal face-to-face interaction such as body language and subtle changes in facial expression.

That's why a \$4.5 million federal government investment in NECTAR is sweet news for the blossoming field of collaborative research technology in Canada. Public and private sector partners, including Microsoft Research, Microsoft Canada, Smart Technology, Bell Canada and Avaya are expected to fund up to an additional \$1.2 million.

The Network for Effective Collaboration Technologies Through Advanced Research (NECTAR), a new Natural Sciences and Engineering Research Canada (NSERC) research network will investigate the technological, social and linguistic issues that make computer-supported collaboration more efficient, productive and natural.

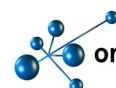
It involves researchers from various disciplines at six universities: the University of Toronto, British Columbia, Calgary and Saskatchewan, and Dalhousie and Queen's University.

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The ORION Research and Discovery News is a monthly electronic publication providing news and information of interest to users of the Ontario Research and Innovation Optical Network and to the worldwide research and education community.



## Megaconference VI

# Ontario urged to join “global conversation”



With the ORION network in place throughout the province, Ontario is being urged to join global conversation in the annual Megaconference, in early December.

The dynamic combination of broadband networks and videoconferencing technology is revolutionizing communication around the world. Uses for videoconferencing seem limited only by the imagination of its users. Nothing demonstrates this more convincingly than the annual Megaconference, the world's largest simultaneous Internet videoconferencing event to test, discuss, and present applications of IP-based H.323 Videoconferencing.

Last year's conference attracted more than 1,000 participants from over 200 institutions in 27 countries on five continents. Many more watched the simultaneous stream using a web browser and freely available stream players.

Participation of Ontario-based institutions, however, was limited. ORION hopes to change that

this year, with a call to user organizations to get involved.

The Megaconference uses H.323 videoconferencing to connect speakers from across the globe to share their latest real-world uses of H.323 videoconferencing. It's not often that you get the opportunity to network with the global research and education community without having to travel.

The theme of this year's Megaconference is "Let's Talk: Global Communications, Innovation and Participatory Videoconferencing", and will take place on December 9, 2004 from 8 a.m. to 2 p.m., and 6 p.m. to midnight Eastern Standard Time.

The conference is divided into two sections, with a four-hour, informal "hallway session" between them. In keeping with the conference theme, participants are encouraged to "stay up late" or "get up early" in order to interact with people from other time zones.

Already, almost 100 institutions on six conti-

nents from the Philippines to Hungary and from Australia to Finland have registered with the common goal of furthering the use of videoconferencing in education and research and advancing of state of the art in videoconferencing technology.

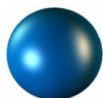
Organizers are inviting everyone with access to advanced Internet connectivity and an H.323 videoconferencing endpoint to join the global conversation.

"This is not just a great opportunity for institutions that use ORION to see how their colleagues are using videoconferencing technologies to enhance teaching and research," said ORION President/CEO Phil Baker. "The Megaconference is also a unique opportunity to be counted among other leading global institutions and to showcase our capabilities to the rest of the world."

Conference organizers are still accepting proposals for interactive presentations. For more information visit [www.megaconference.org](http://www.megaconference.org).



## New focus to Ontario research funding



The Ontario government's announcement of a new research fund is good news to Ontario's research community. At least \$300 million is being committed for equipment and other research infrastructure over the next four years, an amount to be matched by another \$450 million from the federal government and other partners.

Ontario Premier Dalton McGuinty made the announcement at the Ontario Chamber of Commerce Economic Summit earlier this month.

In the modern economy, Canadian universities have the importance that mining and timber companies once held for Canada, Premier McGuinty stated. Universities should be mining ideas, and business and labour should be working with universities to commercialize those ideas, to turn them into viable, innovative products, he said.

Ontario is consolidating its three research funds — the Ontario Innovation Trust, Ontario Research and Development Challenge Fund and Ontario Research Performance Fund, into the new Ontario Research Fund, now touted as "one-stop shopping" for researchers that need to access funding.

Economic Development and Trade Minister Joe Cordiano, who has responsibility of the new fund, said the move is meant to create "greater accountability, greater transparency and a made-in-Ontario research direction." Details of the research community will be able to access these funds are to be announced in the New Year.

Carleton University President Richard Van Loon welcomed the funding announcement, noting "this funding will enable Carleton and other universities to maintain their momentum of research and development so crucial to the advancement of knowledge and the future economic prosperity of Ontario."

Lorna Marsden, president of York University, told media that the research funding will help universities, which have to compete with other institutes around the world to attract the best people to do research.

The new focus on research funding complements an announcement in last year's Ontario Budget of \$27 million over four years to establish a new Ontario Research Commercialization Program, to test, prototype and turn new ideas into commercial reality.

Earlier this year Cordiano told a luncheon audience at the Economic Club of Toronto that the government aims to strengthen Ontario's international research relationships and attract leading scientists and researchers here.

He noted that, although Ontario is home to many of the best research and scientific minds in the world and the province has invested approximately \$2.6 billion into public research during the last decade, less than 10 per cent of companies are tapping into the world-class research capacity that exists in our public research institutions.





## ORION News Briefs

### Still time to register for CANARIE workshop

If you or your organization hopes to benefit from adopting, implementing, or investing in advanced network applications in healthcare, learning, business or new media, then consider signing up for next week's "Showing Results - Sharing Knowledge" workshop, hosted by CANARIE. The purpose of the workshop, part of a series that began in Halifax last month, is to showcase the results of projects CANARIE has funded over the years, and to help the projects move forward by encouraging uptake of the initiatives. Project leaders will present their achievements and future plans to potential customers, strategic partners, investors, adopters and funders. The initiatives represent some of Canada's most innovative projects, involving collaboration between researchers, educators and industry. There is still time to register to the event, Nov. 3 and 4 at the Toronto Congress Centre. Visit [www.canarie.ca/conferences/fall\\_series/index.html](http://www.canarie.ca/conferences/fall_series/index.html)

### Advanced networking comes to Peterborough

Up to 50 people are gathering at Trent University for Peterborough's introduction to advanced networking, at this week's ORION-CA\*net 4 Advanced Networking Day, co-hosted by Trent, Fleming College and Peterborough's regional network - P\*ran. "ORION brings wonderful, new opportunities to Peterborough and the entire region," said ORION President/CEO Phil Baker, who kicks off the Oct. 26 workshop along with past Fleming College President Brian Desbiens, also an ORANO board member, and Dr. Susan Clark, Provost and VP of Academic at Trent. "Peterborough is now connected in a world-class way," says Randy Neals, Manager, Network and Security at Trent. "The network enables us to do between universities, what we could only do across our own campus before its installation. It opens up a world of opportunity for our researchers." "Being part of this network has removed the barriers to real global connectivity for educators in Ontario," says Jason Orchard, Fleming's director of Network Services and Telecommunications. "CANARIE is proud to support and partner with ORION and other provincial networks. Together, we are giving Canadians the tools for 21st century research, teaching and learning," said Dr. Andrew Bjerring, president & CEO of CANARIE. Along with experts from ORION, CANARIE and the host institutions, the workshop also features a researcher from Trent Water Quality Centre.

### Halifax hosts 2004 IWAY Awards

The 9th annual 2004 CANARIE IWAY Awards Gala Dinner takes place on Monday, November 22, 2004 at the World Trade and Convention Centre in Halifax, Nova Scotia. The national event organized by CANARIE honours individuals, groups and organizations that have made outstanding contributions to Canada's information society. IWAY, short for Information Highway, celebrates the innovators behind Canada's advanced network development and use. The Awards recognize innovation in research and development, and focus on advancements in Internet technology that will provide cultural, social and economic benefits to all Canadians.

Winners are nominated by their peers and selected by a panel of high technology and advanced Internet professionals from across Canada. There are five award categories: New Technology Development, Application of Technology, Community Service, Adaptive Technologies, Public Leadership, and the Judges Choice Award.

### Caltech offers research collaboration service

California's Caltech is extending its Virtual Rooms Videoconferencing System (VRVS) and collaboration service to R&E networks and major research projects around the world. Promoted as a real-time, web-based infrastructure, the service supports all protocols and a full range of client devices for collaboration, from mobile systems through desktops to installations in large auditoria. The VRVS Project will offer each of its partners a dedicated "community" of virtual rooms hosted in the VRVS Web server, in exchange for appointing a designated full time administrator working on behalf of the partner's field. Touted as "globally scalable next-generation system for real-time collaboration by small workgroups, medium and large teams engaged in research, education and outreach, operating over a collection of national and international networks, the system was initially developed by Caltech as a prototype-production system serving the high energy and nuclear physics and other data-intensive science and engineering sectors. Learn more at [www.vrvs.org](http://www.vrvs.org).

### Majority of state nets access Internet2

More than 25,000 schools, libraries, and museums in 34 states have access to an Internet2 backbone network based on the results of a bi-annual survey. Titled Unleashing the Educational Power of Broadband, the survey was conducted by Internet2 to assess the adoption of high-performance connectivity among educational institutions across the U.S. It highlights the results of efforts by Internet2 members and the broader education community to take advantage of a program to allow expanded access to Abilene, the Internet2 national network backbone, by state and regional education networks through sponsorship by Internet2 university members. Access to high-performance networking provides teachers and students with a rich, interactive learning environment not available on today's commercial Internet. However, without adequate local connections to the network, the benefits of advanced networking remain largely unrealized for the majority of individual organizations, as the survey also revealed that while 84% of the connected facilities could potentially access the network at over 155 megabits per second (Mbps), the vast majority report connections of less than 10 Mbps. Visit <http://k20.internet2.edu>.

### ORION & ABEL team up for school boards

ORION and the Advanced Broadband Enabled Learning (ABEL) program travel to Thunder Bay Nov. 17, to kick off the first of a series of workshops aimed at sharing information on the benefits and resources boards can expect by connecting to ORION and collaborating with educators across Ontario and around the world. The workshop will be hosted at Lakehead University's new state-of-the-art Advanced Technology and Academic Centre. Each of northwest Ontario's school boards is expected to send representatives, including the

three school boards that are currently connecting to ORION. Contact [info@orano.on.ca](mailto:info@orano.on.ca).

### New president at Loyalist

Maureen Piercy takes over as Loyalist College of Applied Arts and Technology's fourth president on January 1, 2005, succeeding President Douglas Auld who is retiring. Piercy intends to build on the college's excellent reputation and track record while developing existing partnerships and forging new ones. Piercy currently serves as Loyalist's Vice-President Academic, and has 24 years of experience in the Ontario public college system. She has held several senior administrative posts at Loyalist including Vice-President of Continuing Education and Skills, and served as Acting President for two terms, in 1999 and 2003. Prior to joining Loyalist in 1988, Piercy was Director of Marketing and Information Services at Sheridan College. Piercy worked as a journalist/ researcher and editor with Maclean's magazine. She holds an honours undergraduate degree from Queen's University, a diploma in Print Journalism from Loyalist College, and a Master's Degree in Education from Brock University.

### Support to link researchers to ocean grid

A US\$3.9 million National Science Foundation (NSF) grant will assist oceanographers and computer scientists in designing a high-speed wireless and optical network infrastructure to link research institutions on land with several existing or planned ocean observatories off the west coasts of the United States, Canada and Mexico. It will be a prototype for undersea sensor networks, both in the delivery of data from sensors as well as the control of sensors and networks from land. The four-year grant was awarded to the University of Washington, the University of California-San Diego and partner institutions to build the Laboratory for the Ocean Observatory Knowledge Integration Grid (LOOKING). They will collaborate on designing experimental wireless, optical networks and Grid technology, including the development of Web services, networking protocols, devices and sensors. [www.uwnews.org/article.asp?articleID=5691](http://www.uwnews.org/article.asp?articleID=5691)

### Astronomers demonstrate Internet telescope

European and US radio astronomers have demonstrated a revolutionary way of observing the Universe through the Internet, allowing clearer views of the furthest and faintest regions of space. Using research networks, astronomers are able to see deeper into the distant Universe and capture unpredictable, transient events as they happen. VLBI (or Very Long Baseline Interferometry) is used by radio astronomers to image the sky in supreme detail. Instead of using a single radio dish, arrays of telescopes are linked together across whole countries or even continents. When the signals are combined in a specialised computer, the resulting image has a resolution equal to that of a telescope as big as the maximum antenna separation. Until now, data had to be recorded onto tape and then shipped to a central processing facility for analysis. Radio astronomers were unable to judge the success of their endeavours until weeks or months after the observations were made. By linking the telescopes electronically in real-time, they can now analyse the data as it arrives. Learn more at [www.naic.edu/~astro](http://www.naic.edu/~astro)



# Workshop brings players to the table



A half-day workshop with Seattle-based ResearchChannel in Toronto earlier this month promises to have a lasting impact as several of Canada's leading media and education institutions came together to share ideas, and explore how best to collaborate in the new and emerging media of high-speed broadband networks.

Ranging from TVOntario, to Bibliocentre to the National Film Board, several universities and other organizations accepted ORION's invitation to explore opportunities for greater collaboration, especially over ORION's shared, collaborative network infrastructure.

What also helped bring them together was the opportunity to spend time with Amy Philipson, Executive Director, ResearchChannel and University of Washington Assistant Vice Provost, Streaming Media Video and TV Technologies, who travelled from her home base in Seattle to join the workshop.

Hosted at the University of Toronto's Knowledge Media Design Institute, the workshop had immediate, positive results, says ORION President/CEO Phil Baker.

The organizations got to know each other a little better and they started to make connections on future collaborations, discovering areas of mutual interest, and prospects for future partnerships.

Although the ResearchChannel has developed a successful partnership program, with the participation of advanced education institutions in several countries, the participation of Canadian or Ontario institutions is limited. Through the workshop, ORION aimed to identify interest in developing

similar Ontario or Canadian content carried by the ResearchChannel, perhaps over ORION and other R&E networks.

Workshop participants wanted to learn more about the ResearchChannel's library of video-on-demand resources. ResearchChannel viewers or surfers access information ranging from astronomy, computer science and engineering, and medicine, to politics and early childhood development, including live lecturers from leading academic institutions from throughout the US and abroad.

The workshop participants zeroed in on issues that might be a barrier to greater involvement, such as broadcasting rights and intellectual property issues. Also discussed was the reluctance among academics and lecturers, prevalent here and in the U.S. in having lectures or content openly available to the entire research or education community or general public.

The workshop participants also discussed potential collaboration between the ResearchChannel in test-bed research in advanced learning technologies and distribution of high quality multi-media, such as the transmission of High Definition video over IP, and other areas of research.

Also participating in the workshop were the Rogers Communications Centre - Ryerson University; TVOntario; Ontario Bibliocentre; the NFB's Toronto Mediateque; Sheridan College, York University's ABEL Program and Borden Street, a leading digital media production/consulting company.

The group agreed to meet again to explore concrete ideas for collaborations and projects.



## NECTAR – sweet news for distance collaboration

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The research will focus on three themes.

Since casual face-to-face encounters can often spark collaborative efforts, the Commons theme focuses on overcoming distance-related impediments to the same kind of rich casual interaction in a "virtual Commons", perhaps by developing technology that lets people easily track critical "awareness" information.

The second theme involves finding ways to match or even surpass the high-performance "Workroom" that involves not only face-to-face interaction, but also shared physical surfaces like tables and whiteboards.

The third theme involves presentations, traditionally held in a formal environment in which all people are in the same physical space at the same time.

NECTAR's goal is to provide groups with a flexible and scalable technology that manages presentations to both small and large groups, where the presentations can be easily accessed remotely in real time or after the fact.

The Network already has a head start on developing this third theme with a technology infrastructure called ePresence, an interactive webcasting and archiving system developed by ePresence Lab at the University of Toronto's Knowledge Media Design Institute (KMDI).

Slated for open source release in the near future, NECTAR intends to test and refine its research results by augmenting and enhancing ePresence rather than starting from scratch.

Dr. Ronald Baecker, the Network's scientific director, is a professor of computer science at the University of Toronto and the founder and chief scientist of KMDI. Dr. Saul Greenberg of the University of Calgary and Dr. Carl Gutwin of the University of Saskatchewan will act as team leaders. Dr. Kellogg Booth of the University of British Columbia will be associate director for NECTAR.

For more information, visit [www.nectar-research.net](http://www.nectar-research.net) or <http://epresence.tv>

## GTAnet reaches key milestone

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of Technology and Advanced Learning, Seneca College and the University Health Network.

With \$2.5 million in funding from ORION toward acquisition of the fibre and equipment for the network, the overall value of the project exceeds \$5 million. ORION's contribution to GTAnet is part of a \$5.8 million investment by ORION and the government of Ontario to post-secondary and research institutions to allow them to connect to the new network.

GTAnet, which held its second Annual General Meeting earlier this month, reappointed Gagne as Chair, Ryerson's Assistant Director, Communications Services, Ken Woo as Vice-Chair, Siciunas as Treasurer, and Humber's Bob Botham as Secretary.



### ORION RESEARCH AND DISCOVERY NEWS

ORION is an advanced high-speed fibre optic network that connects research and education institutions to each other and to colleagues around the world. Spanning 4,200 kilometres to 21 cities throughout the Province of Ontario, ORION brings leading-edge network capability to the publicly funded R&E community and is a catalyst for creative and innovative next generation Internet applications. ORION is owned and operated by the Optical Regional Advanced Network of Ontario (ORANO). Visit our web site [www.orion.on.ca](http://www.orion.on.ca) or write the Editor at [info@orano.on.ca](mailto:info@orano.on.ca). Subscribe at [www.orano.on.ca/newsletter/subscribe.html](http://www.orano.on.ca/newsletter/subscribe.html)

