



From 3D Mona Lisa to virtual reality...

Ontario Summit to showcase exciting innovations in research and education



The 2007 Ontario Research and Education Summit is around the corner and this year's program promises to be the most innovative and varied agenda yet.

There's still time to register online for the conference, which is dedicated to showcasing achievements and capabilities made possible through global advanced networking and new collaborative tools and technologies.

Once again, ORION has teamed up with the MaRS Collaboration Centre to present the Summit, June 4 and 5 at MaRS' state-of-the-art facilities in Toronto.

Keeping with the theme of "The Promise of Technology," the fourth annual conference features a rich program, including live demonstrations of 3D technologies, real-time sessions between researchers and students, and the Canadian team that made world headlines with a stunning breakthrough revealing long-hidden secrets of the Mona Lisa.

With an expanded programme over two full days, the Summit presents nearly 40 world-class keynotes and presenters, with concurrent sessions and demonstrations that showcase the latest in innovation, looking at what's on the horizon for research and education technologies here in Ontario and around the world.

There is still time to register online. Students also receive a discount.

For more details about the Summit, visit the website at www.orion.on.ca/2007orionsummit.

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High-powered keynotes:

The conference's opening keynote features **Rob Pennington**, Deputy Director of the National Center for Supercomputing Applications (NCSA) in the U.S., which has contributed significantly to growth of the worldwide cyberinfrastructure for science and engineering.

That sets the stage for a high-powered roundtable on critical infrastructure for research and education in Canada, chaired by **Walter Stewart**, Senior Advisor, Intelligent Infrastructure – CANARIE.

His panel includes **Dr. Paul G. Sorenson** of the University of Alberta, co-author of Alberta's new Cyberinfrastructure for Innovation Initiative. Joining the panel is the new president of York University, **Dr. Mamdouh Shoukri**, who will share his insights from his background in science and research, and most recently as VP Research and International Relations, McMaster University, one of Canada's top research institutions. Rounding out the panel is **Dr. Hugh Couchman**, Scientific Director of the Shared Hierarchical Academic Research Computing Network (SHARCNET).

CANARIE President and CEO **Andrew Bjerring** also provides an update on CANARIE, which has been confirmed for renewed funding by the federal government for the next five years. Bjerring will touch on future directions for CANARIE and the national network.

Futurist, trends and innovation expert **Jim Carroll** offers his insights as to where the high-velocity technology voyage is taking the world, in the context of business, healthcare, society and education.

Renowned education guru **Professor Curtis J. Bonk** from Indiana University will present 10 technology trends that have flattened the world of learning and made it accessible to increasing numbers of learners.

The Summit's closing keynote is **Dr. Alejandro Jadad** of the Centre for Global eHealth Innovation, on the topic, "Humanodes in the Global Superorganism: How technology can help us reach optimum health and well-being in the 21st century."

Loyalist show first on global student TV channel

Taste, a weekly cooking show produced by Loyalist College students, has become the first Ontario student production to be included in Open Student Television Network (OSTN) global television programming.

Produced by the Belleville college's TV and New Media students, the show features Chef Heinz Haas. It airs on cable and broadcast stations – and now globally on OSTN, thanks to the college's connection to ORION.

OSTN is the only 24-hour, seven-day global channel exclusively devoted to student-produced programming. In August 2006, ORION partnered with OSTN to bring the channel to Ontario colleges and universities to give students and faculty a powerful platform to showcase their film, video and television productions to a global audience. The agreement also allows institutions to host the channel on campus.

OSTN multicasts short and feature-length films, documentaries, performing arts, news, and cultural and lifestyle programs. Students create content and make programming decisions necessary for the network to appeal to its peer-viewing audience. It also provides students with resources, community, exposure and experience.

Loyalist was the first Ontario institution to sign on to OSTN. "The chance to showcase our students' work to a global audience is amazing. To compare their work side by side with student works from around the world is both motivating and edifying for them," said Cathy Goddard, a professor in Loyalist's Television and New Media Produc-

tion program. "It also gives them something really impressive to include on their resumes when looking for that first job out of school. We are thrilled to be contributing programming to OSTN and plan to expand our involvement by delivering other shows produced by Loyalist College students."

Taste is a hands-on experience for students enrolled in the Lifestyle Programming course of Loyalist's TV and New Media program, to put their production skills into practice. Lifestyle programming – shows dedicated to cooking, decorating, personal makeovers, hobbies, etc. – is one of the staples of today's television industry.

Loyalist's student-produced show, and other student programming from around the world, can be viewed by visiting ORION Student TV, a portal streaming the 24-hour content of OSTN: www.orion.on.ca/research/orionstudenttv.html. The show can be seen on OSTN on Tuesdays and Thursdays at 12:30 pm and on Saturdays at 5:30 pm.



MaRS and Sheridan recognized for IT leadership

Two of Ontario's most innovative institutions have been recognized by the prestigious Computerworld Honors Program.

MaRS Discovery District and the Sheridan College Institute of Technology and Advanced Learning have been named Laureates by the Computerworld Honors Program. Gold Medals will be awarded in a ceremony in Washington, D.C. on June 4, 2007.

Sheridan was nominated in recognition of its innovative, fully converged IP network for voice, video and data.

Sheridan College is one of the leaders in the field of digital media studies and new technologies. It pioneered the integration of mobile computing technology into the teaching environment, and was also one of the first organizations in the world to implement a Cisco enterprise VoIP solution.



The college recently installed a Tandberg H.323 video communication infrastructure, able to provide support to the new Virtual Researchers on Call (VROC) program, a province-wide initiative with a mandate to connect scientists and researchers to any K-12 classroom. VROC uses Sheridan's video infrastructure and expertise to connect K-12 students to academic experts in science, technology, engineering and math, in an attempt to combat the declining numbers of graduates choosing these fields in North America in recent years.

The new video infrastructure is popular amongst the Sheridan community. "So far, we have over 100 employees at the college who will have web cams connected to their computers, controlled by their telephones for ease of use," said Trevor Hanekamp, Senior Telecommunications Analyst at Sheridan. "Many users have expressed their relief and gratitude for the system's impact on their lifestyle by reducing the time and stress of commuting."

MaRS - Evolution of Convergence

The MaRS Centre represents an evolution of convergence and is the first building of its kind to leverage emerging Internet Protocol (IP) based technologies to create a fully connected virtual community for tenants located in the building and a broader stakeholder community connected via broadband networks.



"MaRS is transforming innovation by weaving world class collaboration and communications technology into the fabric of scientific discovery," said Robert Smith, MaRS Chief Technology Consultant regarding its converged broadband network capabilities. "Supporting the MaRS vision required a fresh approach to designing a standards-based technology platform. It had to facilitate natural collaborations regardless of physical location, device or network protocols. Creating a collaborative culture requires integrating familiar new tools with existing ones."

"Keeping Canada at the foreground of new technology innovation is the focus of Toronto's MaRS Discovery District, which houses Canadian scientific, business and capital communities," says John Roese, Chief Technology Officer of Nortel, which nominated MaRS for the Laureate medal.

Established in 1988, The Computerworld Honors Program documents the achievements of the people and organizations around the world whose applications of information technology promote positive social, economic and educational change. Program Laureates and their case studies become part of the Program's Global Archives. The information becomes available to researchers, students and scholars through its web site (www.cwhonors.org), and through digital records housed in national archives in over 100 universities, museums and research institutions throughout the world. To learn more, visit www.cwhonors.org.

\$2M for OCAD Digital Futures Initiative

A new era of collaboration is upon us as what is being heralded as the "imagination economy" brings creative minds together with technology and engineering minds to produce and further enhance new digital technologies.

The practical virtues of the highly skilled scientific, technological and engineering minds are universally lauded, but so far, not much attention has been paid to what creative minds can bring to the table – until now.

Chris Bentley, Ontario's Minister for Training, Colleges and Universities, recently announced a \$2 million annual investment by the Government of Ontario into the Digital Futures Initiative (DFI), an important new cross-disciplinary program which will enable the Ontario College of Art & Design (OCAD) to significantly enhance its curriculum and infrastructure of new digital technology studies.

The project will place OCAD at the forefront of the emerging "imagination" economy of the 21st century, says OCAD President Sara Diamond. "Students will now have many new opportunities to study art and design practice using digital technology."

This emerging new era of "imagination" economy is highly collaborative and cross-disciplinary as existing boundaries between fields blend. Artists and designers are pioneering new experiences and forms of expression using digital technology.



Ultimately, the initiative will strive to produce graduates who meet Ontario's need for creators and innovators – graduates who can imagine, design, produce, direct or initiate businesses across a wide range of sectors and industries.

The initiative will be supported by private sector partners to ensure the curriculum meets industry needs as well as provides students with work-study experiences. Through partnerships, the initiative will develop applications for industries in the communications, new media, advertising, technology, finance, health care, tourism, entertain-

ment and service sectors. ORION is one of the project's participating partners.

The Digital Futures Initiative will also engage industry partners and other educational institutions. Industry partners will participate on advisory boards, collaborate on research, and provide students with work-study experiences and opportunities to engage directly with real-world challenges. Academic partners will develop programs and courses jointly with OCAD, thereby giving students greater access to specialized faculty and equipment across a number of Ontario's leading educational institutions.

Learn more at www.ocad.ca/about_ocad/news_events.

ORION Research and Discovery News

The ORION Research and Discovery News provides news and information of interest to users of the Ontario Research and Innovation Optical Network and to the worldwide research and education community.

ORION is an advanced high-speed fibre optic network that connects research and education institutions to each other and to colleagues around the world. ORION is owned and operated by the Optical Regional Advanced Network of Ontario (ORANO).

Visit our web site www.orion.on.ca or write the Editor at info@orion.on.ca. Subscribe at www.orion.on.ca/newsletter/subscribe.html.

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Concurrent sessions:

One of the breakout sessions will discuss the topic of Youth and Science – Making the Connection, chaired by TVOntario CEO **Lisa de Wilde**. The winner of the **Extreme VR Science Fair**, to be announced later this month, has been invited by Summit organizers to present his or her project to the conference, featuring the use of state-of-the-art virtual reality, 3D technology, provided by Sudbury's Mining, Innovation, Rehabilitation and Applied Research Corp. (MIRARCO). Attendees will also be able to tune into a live **VR**OC (Virtual Researchers on Call) session between **Dr. James Koropatnick** of the London Health Sciences Centre and a high school science class in Peterborough.

The University of Toronto's **Prof. Alberto Leon-Garcia** pulls together a panel of public and private sector experts to give an overview of what's on the horizon for next-generation collaboration technologies, while the University of Ottawa's **Dr. Khaled El Emam** chairs a session on new technologies driving collaboration and innovation in the medical field.

Greg Weiler of Fanshawe College and **Marti Jurmain** of Niagara College team up to facilitate a discussion on the opportunities and barriers facing Ontario colleges in expanding their roles in applied research.

Finally, CIOs and researchers from throughout Ontario have been invited to the Summit to participate in a broad discussion, chaired by York University CIO **Bob Gagne**, on what is needed to close the gap between CIOs and institutional information technology, and the researchers, looking at how best to give researchers the tools they need to do their jobs.

Other highlights:

Among the highlights of the Summit will be NRC-IIT Director General, **Christian Couturier**, who will speak and demonstrate his team's recent collaboration with the Louvre, which made world headlines, on the NRC's advanced technologies and expertise to reveal new information about the most famous painting in the world. An NRC research team was instrumental in providing the imaging technology to document the 500-hundred-year-old painting's state of preservation, creating a high-resolution archival quality 3D digital model of the masterpiece.

No less impressive is **Dr. David Topps**, Director of eLearning at the Northern Ontario School of Medicine (NOSM), presentation on the school's new **iAnatomy** collaboration with California's Stanford University School of Medicine making use of Stanford's collection of stereoscopic images of human anatomy to allow faculty and students to view and manipulate high-definition, three-dimensional anatomical representations.

Also making headlines, in the information technology and business sector, is **Barry Fogarty**, President of **Octopz**, who will speak about the new commercial venture operating out of MaRS, which has developed a new online, on-demand Web 2.0 collaboration technology that blends digital media, web conferencing, VoIP and content management technologies and other tools and resources in a seamless collaborative work environment.

There is still time to register online. Students also receive a discount.

For more details about the Summit, visit the website at www.orion.on.ca/2007orionsummit.

Enthusiastic, growing response to ORION Awards

Judges faced a challenge this week, reviewing all the high-quality submissions for the 2007 ORION Awards.

The enthusiastic response from Ontario's research and education community was impressive, with 26 nominations, seeking recognition for inspiring leaders and projects that are at the cutting edge of research and innovation.



Submissions ranged from global-scale scientific collaboration, to home-grown innovations in teaching and learning, to submissions highlighting individual leadership and lifetime achievements in innovation and information technology.

The panel of judges represent a broad spectrum of Ontario's research and education community, from the fields of teaching, research, information technology, libraries, and advanced networking.

First introduced in 2005 with the recognition of Ontario's and Canada's Internet pioneers, the program recognizes achievement in Learning, Discovery and Leadership. The Awards recognize and celebrate individuals and groups that have successfully championed and demonstrated the use of advanced networks and collaborative technologies in scientific research, teaching and learning.

The Awards will be announced and presented at a reception on Monday, June 4th during the Ontario Research and Education Summit at the MaRS Discovery District in Toronto.

Learn more at www.orion.on.ca/2007orionawards.

Ryerson launches automated lecture podcasts

Ryerson University's Department of Computer Science has developed the first in-house, fully automated lecture podcasting technology in Canada. With just a few clicks of a mouse, professors can record and post their lectures online – complete with video, audio and presentation slides. Students are then able to watch the lectures online or download them for later viewing on portable media players such as iPods or smart phones. They can also subscribe to the lectures using a web feed reader or iTunes.

"Instructors without a technology background will be able to use the service because it performs all the post-production work automatically," says Computer Science PhD student and Instructor Hossein Rahnama. Rahnama piloted the technology this past semester with great success in his CPS 630 Web Applications course. "By having the video, audio and slides available, students can re-capture the feeling of being in the classroom."

Rahnama developed the technology with the help of Computer Science students Craig Codeiro and Bart Gajderowicz, and Radio and Television Arts student Jim Loney. The project was a collaboration between the Department of Computer Science and the Rogers Communications Centre, where Rahnama worked as an undergraduate research assistant under the supervision of Bradley Fortner, Operations and Technology Program Manager.

Each Ryerson classroom currently has a Wi-Fi enabled camera installed, which communicates directly with the instructor's computer (either the classroom podium computer or a personal laptop). The instructor presses the "Record" button and the camera detects his/her location. The slides, video and audio of the instructor are recorded as separate streams, which are automatically sent to the computing department's production server, once the instructor clicks "Publish" at the end of the lecture. The production server synchronizes the streams and generates three different formats for different device capabilities.

"The learning experience is enhanced since students can listen to the lecture as many times as they want, instead of only reading over class notes or PowerPoint slides," said Rahnama.

The podcasts were particularly popular among commuter students, who were able to review lectures while traveling to and from campus.

"Students have found it extremely beneficial," says Dr. Alireza Sadeghian, Chair of the Department of Computer Science and Rahnama's research supervisor. "It adds value to the learning experience as students can review the course material at any given time."

"One issue about this technology could potentially see a decrease in student attendance," said Rahnama. "However, this could be addressed by creating policies such as only making the lecture slides, and not the exercises, available over podcasts."

Ultimately, Rahnama hopes to launch the podcasting system throughout the university using Apple's iTunes University program and eventually integrate it with Ryerson's Blackboard system.

For more information, visit www.ryerson.ca/news.

The logo for Ryerson University, featuring the text 'RYERSON UNIVERSITY' in white, uppercase, sans-serif font on a blue rectangular background with a yellow vertical bar on the right side.

ORION News Briefs

Waterloo hosts CANHEIT 2007

ORION is once again a sponsor at CANHEIT, the fifth annual Canadian Higher Education and Information Technology conference, this year hosted by the University of Waterloo and taking place on the campus of Wilfrid Laurier University in Waterloo. The May 27-30 national conference brings together senior administrators, managers, and staff who are responsible for the management and evolution of their campus information systems, learning systems, and computing systems and network infrastructures. Keynote speakers include Richard N. Katz, VP of Educause, and Richard Spencer, Senior IT Strategist at the University of British Columbia. Session topics include digital game-based learning and information literacy, server virtualization and disaster recovery, the future of identity management in higher education, e-classroom experiences, wireless telephony in residence, Moodle and Skype, mobile devices and the university environment, research computing and directions toward centralized support, and more. Visit <https://fortuna.uwaterloo.ca/canheit>.

U of T webcasts convocations

For the first time, the University of Toronto will webcast all convocation ceremonies being held this June. A small number of convocation ceremonies were webcast as a pilot project last year and the feedback was very positive, according to Professor Mariel O'Neill-Karch, co-chair of the committee to review convocation and principal of Woodsworth College. Due to the limited number of seats in Convocation Hall, family members of students who were not able to get tickets can still view the ceremony online. Also, relatives of international students from countries around the world and unable to travel, can still see their loved ones accept their degrees. "Webcasting also means you can replay the ceremony as many times as you want afterwards and watch it in any time zone around the world," said Prof. O'Neill-Karch. For more information, visit www.news.utoronto.ca.

Research and Innovation Award winners

Premier and Minister of Research and Innovation Dalton McGuinty honoured Ontario's top research and innovation talents recently at the inaugural Premier's Innovation Awards. Winners in the Premier's Catalyst, Discovery and Summit awards programs were recognized for their achievements in everything from life-saving medical research to innovations that are revolutionizing business and industry. Winners of the Premier's Discovery Awards for individual research achievement are: Spencer C.H. Barrett, University of Toronto, for Life Sciences and Medicine; Andreas Mandelis, University of Toronto, for Natural Sciences and Engineering; Regna Darnell, University of Western Ontario, for Social Sciences and Humanities; and Aaron Fenster, Roberts Research Institute, for Innovation Leadership. The Premier's Summit Awards program provides research support to a small number of outstanding medical researchers, in partnership with their sponsoring institution. The winners for 2007 are: John E. Dick, University Health Network; Tak Mak, Princess Margaret Hospital, Uni-

versity Health Network; Anthony J. Pawson, Samuel Lunenfeld Research Institute, Mount Sinai Hospital; and Peter St George-Hyslop, University of Toronto and University Health Network. These award programs are part of the government's strategy to attract and retain Ontario's best research and innovation talent. Learn more at www.marsdd.com.

Commercializing university research

The University of Toronto and the Council of Ontario Universities (COU), in partnership with MaRS Discovery District, host a one-day international symposium on commercializing university research on Thursday, May 24th at MaRS. The theme is "Today's research, tomorrow's prosperity." The symposium offers an opportunity to interact with international leaders from business, industry, government and academia. Panel topics include "Getting the Job Done: International Experiences in Technology Commercialization" and "What Business Wants: The Business View of Technology Commercialization." Keynote speakers include David Naylor, President of U of T, Ross C. DeVol of the Milken Institute, and Ted Sargent, Canada Research Chair in Nanotechnology. For more details, visit www.research.utoronto.ca/events.

Support for Windsor web portal

The University of Windsor has received an in-kind grant valued at \$1 million U.S. to build a Web portal for the campus community. Through the Campus EAI consortium's in-kind contribution, the university will gain access to tools and services already developed, programmed and tested by other institutions. Roger Lauzon, executive director of the university's Information Technology Services, described the campus portal as "a personalized Web-view of the university." It is intended to provide members of the campus community with a single point of access to online information on their integrated teaching and learning interests, student services, and extracurricular activities. The first phase of the campus portal, which will concentrate on student needs, will be launched by the beginning of June 2007. More features for faculty, staff and other users will be rolled out over time. The CampusEAI Consortium (CEAI) is a global not-for-profit information technology services and consulting provider focused on helping its members implement enterprise e-business solutions timely and cost-effectively. Campus EAI also hosts the Open student Television Network (OSTN), which partners with ORION to showcase Ontario student film and television production to global audiences over global research and education networks. For more information, visit www.uwindsor.ca/.

New IPv6 Land Speed Records

Internet2 announced recently that an international team led by the University of Tokyo has set two new consecutive Internet2 Land Speed Records (I2-LSR) in the IPv6 single and multi-stream categories. These records mark the ninth and tenth time a University of Tokyo-led team has achieved an Internet2 Land Speed Record. As an open and ongoing competition for the highest-bandwidth end-to-end networks, the Internet2 LSR awards represent the fastest rate at which data is trans-

ferred multiplied by the distance traveled. A team, including CANARIE in Canada, collaborated to create a network path over 30,000 kilometres in distance, crossing 6 international networks - over 3/4 the circumference of the Earth. In doing so, the team successfully transferred data in the single and multi-stream categories at a rate of 7.67 Gbps (230,100 terabit-meters per second (Tb-m/s)). Next, the team used a modified version of TCP to achieve an even greater record. Using the same 30,000 km path, the network was able to achieve a throughput of 9.08 Gbps which is equal to 272,400 Tb-m/s for both the IPv6 multi and single stream categories. In doing so, the team surpassed the current IPv4 records, proving that IPv6 networks are able to provide the same, if not better, performance as IPv4. For more information, see <http://data-reservoir.adm1> and <http://data-reservoir.adm2>.

People News

Andrew Bjerring, President and CEO of CANARIE, has announced his plans to retire by March 31, 2008. Andrew has held the position since 1993, the year CANARIE was inaugurated. **Allison Sekuler**, professor of psychology, neuroscience and behaviour and Canada Research Chair in Cognitive Neuroscience, recently became the Acting Vice-President (Research) of McMaster University, while a replacement can be found for **Dr. Mamdouh Shoukri**, who is the President-Designate of York University. **Eugene Siciunas** recently retired from his position as Director of Computing and Networking Services at the University of Toronto. **Dr. Robert Chambers** stepped into the position earlier this month. After 44 years at the University of Waterloo, **Roger Watt** has retired from his position as Director, Network Services in the Information Systems and Technology department. **Claude Dufresne**, Director, Computing & Communications Services at the University of Ottawa recently retired after 17 years at the institution. **Peter Hickey** was named Acting Director. **Robert Luke** recently started in his new role as Director of Applied Research at George Brown College, where he is responsible for developing the college's research capacity. **Tyson Vickers**, Systems Administrator at ORION, leaves ORION this week after three and a half years to join TUCOWS.