Media spaces are environments that incorporate computer and communication technologies, typically including the Internet, to allow distributed groups of individuals to interact in real-time. My talk will begin by reviewing past media space work on desktop videoconferencing, electronic classrooms, and meeting capture, especially projects at Xerox, Toronto, Sun, Berkeley, Microsoft, and Georgia Tech. We focus particularly on webcasting as an interesting media space that has excellent potential for scalability across a large number of sites. The downside is that webcasting is typically a one-way broadcast from a transmitter to a multitude of receivers, and an ephemeral event that exists only during the live broadcast.

The Toronto ePresence Interactive Media system creates a media space that allows distributed groups of individuals to participate and interact in webcast events such as lectures, and to do so before, during, and after the event. The system currently supports video, audio, slide, and screen broadcasting; concurrent slide review; integrated moderated chat and VoIP support for questions and discussion; tailorable skins; the automated creation of structured, navigable, searchable event archives, and automated data collection for evaluation. Speakers are not forced to use PowerPoint — ePresence transmits several rich media presentation formats. The system is highly cross-platform, supports viewing at bandwidths as low as 56K, and is being distributed via open source and community source strategies. I shall introduce the system and describe some eLearning and medical education projects to which it has been applied.

Perhaps the most important achievement is the creation of a flexible, modular, extensible infrastructure for exploring frontiers of collaboration technologies, for example the following research challenges:

• combining webcasting to many viewers with audio conferencing via VoIP to a few participants
• enhancing in-room awareness of remote participants via text chat displays and webcam slow scan video
• achieving voice recognition of lectures, and solving human factors issues in using imperfect transcripts
• enabling persistent conversation over webcasts (both live and archived) for learning communities
• enhancing collaboration support for distributed teams, e.g., integrating ePresence with blogging and wikis
• allowing user control of live webcasts, including pausing them briefly and then having them “catch up”
• evaluating ePresence in real eLearning uses, such as a test for tri-campus education planned for the fall.

The talk will report on early results in tackling the first four challenges and directions for the other three. This talk describes joint work with Peter Wolf, Kelly Rankin, Gale Moore, Elaine Toms, Gerald Penn, Kostas Plataniotis, Russell Schick, Cosmin Munteanu, and David Fono.

Date & Time: Wednesday, April 5, 2006, at 7 PM
Refreshments will be served 6:30 - 7:00 PM
CoRE Lecture Hall (1st Floor), Busch Campus, Piscataway, NJ
User Experience Research Challenges in Interactive Webcasting

Ron Baecker
Knowledge Media Design Institute, University of Toronto

Biographical Sketch of Ron Baecker

Ronald Baecker is Professor of Computer Science, Bell University Laboratories Chair in Human-Computer Interaction, and founder and Chief Scientist of the Knowledge Media Design Institute at the University of Toronto. He is also Affiliate Scientist with the Kunin-Lunenfeld Applied Research Unit of the Baycrest Centre for Geriatric Care, and is currently on academic leave as Visiting Professor, Cognitive Neuroscience, Columbia University College of Physicians & Surgeons. Baecker is Principal Investigator of the CDN$5.5M Canada-wide NSERC Network for Effective Collaboration Technologies through Advanced Research (NECTAR), has been named one of the 60 Pioneers of Computer Graphics by ACM SIGGRAPH, has been elected to the CHI Academy by ACM SIGCHI, and has been awarded the Canadian Human Computer Communications Society Achievement Award. He is an active researcher, and lecturer on human-computer interaction and user interface design, software visualization, multimedia, computer-supported cooperative work and learning, and software entrepreneurship. He has published over 100 papers and articles, is author or co-author of four books and co-holder of 2 patents, and has founded and run two software companies. His current entrepreneurial venture is a virtual non-profit foundation within the University of Toronto to distribute and support the open source ePresence Interactive Media system (http://epresence.tv). His B.Sc., M.Sc., and Ph.D. are from M.I.T.

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