



Health Care Technologies: Implications for People & Places
March 22-23, 2004, 8:30 am – 5:00 pm

St. Andrew's Club and Conference Centre, 150 King Street, 27th Floor, Toronto
Contact: k.murphy@utoronto.ca/416-946-5958

Workshop Overview

ABOUT HCTP: "Health Care, Technology, and Place" (HCTP) is a CIHR Strategic Research and Training Initiative, launched in 2002 at University of Toronto to address the intersections of health research on bodies, places, technologies, and work. HCTP reflexively interweaves discourses from across the arts and sciences to generate new lines of health inquiry. Visit our website to learn more about HCTP and our generous training fellowships: www.hctp.utoronto.ca.

PURPOSE OF THE MARCH 2004 WORKSHOP: Our aim is to bring together creative, genre-crossing scholars, for two days of intensive, spark-flying exploration about health care and technologies. This event will stimulate new thinking, networking and program development.

PLENARIES: HCTP aims to provide models for our students of the ways that great researchers take risks to think and work across disciplinary boundaries. Plenary sessions will take the form of four linked and moderated 'COMMUNIQUEs' across disciplines.

BREAKOUT SESSIONS: Each morning and each afternoon, concurrent breakout workshops follow the plenary sessions. Five types of Workshops are scheduled, to address diverse topics.

- **Research Catalyst Workshops:** If you are seeking new colleagues or new projects, or if you have an idea to 'pitch' to interdisciplinary collaborators, these sessions are for you. HCTP offers research catalyst funds through the CIHR ICE grant.
- **Works in Progress Workshops:** Opportunities to develop ongoing HCTP-supported research and knowledge translation projects.
- **Knowledge Translation Workshops:** Opportunities to brainstorm innovative KT and dissemination strategies for completed, current, and proposed research. Learn about resources available through the Strategic Alliance with The Change Foundation.
- **Partnerships Workshops:** Opportunities to network with international and domestic research centres. This year's domestic partnerships workshop will focus on strengthening links within the HCTP network. The international partnership workshops will focus on collaborative opportunities with BIOS program at London School of Economics and the UBICARE program at Imperial College, London, UK.
- **Pedagogy Workshops:** Opportunities to plan and to evaluate curricula and mentorship/training activities for HCTP.

PARTICIPANTS: Limited, as usual, to 60 invited Faculty, Fellows and Friends, to facilitate sustained, meaningful dialogue. Disciplines represented: Medicine, Information Science, Nursing, Computer Engineering, Literature, Geography, Sociology, Economics, Pharmacy, Social Work, Visual Arts, Public Health, Kinesiology, Anthropology, Rehabilitation Science, etc.



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8:30AM - 5:00PM Monday

8:30AM- 6:00PM Tuesday

PROGRAM SCHEDULE:

VENUE:

The beautiful St. Andrew's Club and Conference Centre offers panoramic views of downtown Toronto and Lake Ontario, from the 27th Floor of the Sun Life Building, above St. Andrew Subway Station. St. Andrew's offers fine meeting services and excellent dining.

MEALS AND REFRESHMENTS:

Deluxe Continental Breakfast (yogurt, granola, muffins, freshly squeezed juices, danishes, and fresh fruit, coffee/tea and tea) served 8:30-9:00, Monday and Tuesday.

Hospitality Service (coffee/tea, juice, water, soft drinks, home made cookies, fresh fruit) served mid-morning and mid-afternoon, Monday and Tuesday.

Lunch in the Club Dining Room (sandwich and panini buffets, choice of salads and desserts, coffee/tea) served 12:15-1:30, Monday and Tuesday.

Reception (wine & beer, cold and hot hors d'oeuvres) served 5:00-6:00, Tuesday.

FEES:

This event is by-invitation only. There is a waiting list to attend this event. The cost of conference fees for each participant will be borne by the HCTP program. Hence, you are requested to arrive on time and to attend all sessions of this special two-day event.

BIOGRAPHIES

BRIAN CANTWELL SMITH, BSc, MSc, PhD, is Dean and Professor, Faculty of Information Studies, University of Toronto, and holds cross-appointments in the Department of Philosophy, the Department of Computer Science and the Program in Communication, Culture and Information Technology at the University of Toronto at Mississauga. He also holds a Canada Research Chair in the Foundations of Information.

Professor Smith's research focuses on the foundations of computation, information, and technology. He writes not only on the place of these developments in our lives, but also on the transformative effect these concepts are having on our understandings of mind, consciousness, and reality.

Professor Smith is a Canadian, originally from Montreal and Toronto, who received his B.S., M.S. and Ph.D. degrees from MIT, studying in the Artificial Intelligence Laboratory of the Department of Electrical Engineering and Computer Science. Dr. Smith's experience following his Doctorate has been as wide as it has been varied. He has held senior administrative and research positions at the Xerox Palo Alto Research Center (PARC) and academic and administrative positions at Stanford University, University of Indiana at Bloomington and at Duke University, as well as University of Toronto. His work is highly interdisciplinary/multidisciplinary, with scholarly interests ranging from Computer Science to Philosophy and from theory to application. Professor Smith has earned the highest respect of scholars in these fields; few people have developed major intellectual reputations across as many intellectual boundaries, or have the ability to move as seamlessly from theory to application.

DERRICK DE KERCKHOVE, BA, MA, PhD is Director of the McLuhan Program in Culture & Technology and Professor in the Department of French at the University of Toronto. He was an associate of the Centre for Culture and Technology from 1972 to 1980 and worked with Marshall McLuhan for over ten years as translator, assistant and co-author. He edited *Understanding 1984* (UNESCO, 1984) and co-edited with Amilcare Iannucci, *McLuhan e la metamorfosi dell'uomo* (Bulzoni, 1984) two collections of essays on McLuhan, culture, technology and biology. He also co-edited the book *The Alphabet and the Brain* (Springer Verlag, 1988) with Charles Lumsden, which scientifically assesses the impact of the Western alphabet on the physiology and the psychology of human cognition. *Brainframes: Technology, Mind and Business* (Bosch+Keuning, 1991) addresses the differences between the effects of television, computers and hypermedia on corporate culture, business practices and economic markets. *The Skin of Culture* (Somerville Press, 1995) is a collection of essays on the new electronic reality. His latest book, *Connected Intelligence* (Somerville, 1997) was launched last spring. Professor De Kerckhove has offered connected intelligence workshops worldwide, and now offers this innovative approach to thinking together while using information technologies as part of the McLuhan Program.

Besides his scientific interests in communication, Professor De Kerchove is promoting a new field of artistic endeavor, which brings together art, engineering and emerging communication technologies. Another book on "Transinteractivity", the world's first videoconference for the arts which took place between Paris, France and Toronto, Canada, appeared in Paris entitled, *Les Transinteractifs* (editions SNVB - La Villette, 1990). He was a member of the six person government task force on designing a cultural policy for the francophone community in Ontario, and is part of the Canada-wide Media Watch research team and recently appeared before the CRTC Public Hearing Committee on the Information Highway.

GEOFF FERNIE, BSc, PhD, PEng, is Vice President of Research at Toronto Rehabilitation Institute and Past Director, Centre for Studies in Aging, at Sunnybrook and Women's College Health Sciences Centre. A biomedical engineer by training, he holds appointments at the University of Toronto's Department of Surgery, the Department of Rehabilitation Science, the Department of Mechanical and Industrial Engineering, and the Institute of Biomaterials and Biomedical Engineering.

A highly distinguished member of Canada's research community, Dr. Fernie creates technologies that enhance health and dignity of people with disabilities and their caregivers. Among his many honours and awards, Dr. Fernie was the 2002 recipient of the Dr. Jonas Salk Award for "outstanding achievements in development technologies that ameliorate numerous physically disabling conditions. Dr. Fernie's skills in building broad-based research teams and creating stimulating working environments have contributed valuably to the development of HCTP.

His energetic contributions to HCTP, as a Mentor and Faculty researcher, reflect his strong commitment to effective research transfer and uptake and meaningful, productive interdisciplinary cooperation. He has led the design and delivery of the 2003-2004 HCTP "Technologies" Graduate Course.

ELIZABETH D. HARVEY, PhD is an Associate Professor of English and Women's/Gender Studies at the University of Toronto. Harvey has extensive experience managing and teaching cross-disciplinary graduate programs and supervising research that bridges the humanities and health sciences. Professor Harvey is interested in the relationship between physiological organs and psychic or mental conditions: this linkage allows for an understanding of both medical and poetic representations of sex and gender and the



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complicated reciprocal relationship between medicine and literature in early modern culture. Her writings on the history of the body and the history of medicine are published as books and in influential journals in literature and women's studies.

A scholar of early modern literature, feminist theory, and epistemology, she is author of *Ventriloquized Voices: Feminist Theory and English Renaissance Texts* (Routledge, 1992), the editor of *Sensible Flesh: On Touch in Early Modern Culture* (The University of Pennsylvania Press, 2002), and the co-editor of *Luce Irigaray and Premodern Culture* (forthcoming, Routledge, 2004), *Women and Reason* (The University of Michigan Press, 1992), and *Selecting Interpretation: Literary Theory and Seventeenth-Century English Poetry* (The University of Chicago Press, 1990).

Professor Harvey was the first faculty member from a humanities discipline to join HCTP and she has been an active contributor to the program since 2002. Currently she is co-designing curriculum for the 2004 "Bodies" course.

PASCALE LEHOUX, PhD, is an Associate Professor with the Department of Health Administration, and Researcher with the *Groupe de Recherche Interdisciplinaire en Santé* (GRIS) at University of Montreal. Professor Lehoux's primary research interests lie with Health Technology Assessment (HTA), the sociology of innovation, and knowledge utilization. She has published more than 30 papers examining the use of computerized medical records, telemedicine, scientific knowledge, and home care equipment. Her current research program seeks to contribute to the field of HTA by improving the understanding of how knowledge and technology are currently employed, and by identifying ways to improve the use of health information and technology.

In 2002, Professor Lehoux completed an important piece of work for the Romanow Commission. This paper analyses the tensions between the market value of technologies (i.e. their return once they are introduced on the market), their clinical value (what they allow clinicians to know and do) and their social value (the positive and negative changes they can bring). The paper also stresses the importance of creating "upstream" regulatory instruments that can influence R&D processes and the adoption of innovations, in order to promote the marketing and utilization of technologies that more clearly contribute to the collective well-being.

Professor Lehoux is an indefatigable HCTP Mentor and Faculty Researcher. She has delivered seminar presentations, contributed to the design of the HCTP Technologies course, and is a co-author on the HCTP 'anchor' research paper: "How Place Matters: Unpacking Technology, and Power in Health and Social Care", with Professors Blake Poland, Dave Holmes, and Gavin Andrews. She will take up an HCTP visiting fellowship in Toronto, commencing September 2004.

GALE MOORE, PhD is Director of the University of Toronto's Knowledge Media Design Institute. Dr. Moore's primary interests for the past 15 years have been on the social impacts of a variety of information and communication technologies (ICTs), and on the design, use and evaluation of collaboration technologies in everyday life. As a sociologist-designer, her research is informed by a human-centred design philosophy, and grounded in real world communities of practice. A major goal is to bring the experience of people who will ultimately use a technology into the design cycle, and to develop methods for humanizing technology.

From 1992-1995, Dr. Moore was Head of Social Science Research for the Ontario Telepresence Project, a \$6M industry-university cross-disciplinary consortium supported by the Province of Ontario and a number of firms and corporations. She is a co-investigator of KMDI's Bell University ePresence Laboratory that is currently exploring the role of interactivity in web casting to enhance the experience of remote participants. She has recently begin development on a new project in the area of CSCW: computer



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supported cooperative work, in which the goal is to gain insights into the communication practices and interactions among a team of therapists, caregivers and family members supporting an intensive home-based therapy program for a two-year-old child. The insights gained will be used to develop a design rationale for a home-based information environment called The HIVE: Home Information Visualization Environment.

KMDI is partnered with HCTP through a University of Toronto consortium called, "Know-THIS: Knowledge Knowledge Technologies for Health Innovation and Society". Through this partnership, HCTP and KMDI share resources and expertise in distance learning, and interdisciplinary knowledge production. In March 2004, Professor Moore officially joined HCTP as a Faculty Mentor.

NIKOLAS ROSE, PhD is Professor of Sociology and Convenor of the Department of Sociology at the London School of Economics (LSE) as well as Director of the BIOS Centre for the Study of Bioscience Biomedicine, Biotechnology and Society at LSE. He is the managing editor of the influential journal, *Economy and Society*, and is editing, with Paul Rabinow, the *Fourth Volume of Michel Foucault's Essential Works*. Dr. Rose is a widely published scholar of international renown whose work cannot be overlooked for those dealing with issues of power, knowledge, subjectivity and regulation. His work has been translated into Swedish, Finnish, German, Russian, Japanese, Portuguese and Spanish. Professor Rose's current work focuses on the social, ethical, cultural and legal implications of biological and genetic psychiatry and behavioural neuroscience.

Professor Rose is the author of *The Psychological Complex* (Routledge, 1985), *Governing the Soul* (Routledge, 1989) and *Inventing Our Selves* (Cambridge University Press, 1996) and co-editor of *The Power of Psychiatry* (Polity, 1986) and *Foucault and Political Reason* (UCL Press, 1996). He has published widely on conceptions of governmentality and changing rationalities and techniques of political power -- the subject of the book, *Powers of Freedom: Reframing Political Thought* (Cambridge, 1999).

KIM VICENTE, PhD, is Professor in the Department of Mechanical & Industrial Engineering at the University of Toronto, and founding director of the Cognitive Engineering Laboratory there. He is cross-appointed to the Institute of Biomaterials & Biomedical Engineering and the Department of Computer Science at the University of Toronto, an adjunct professor of psychology at Miami University, Ohio, and a registered Professional Engineer in the province of Ontario. He is the author of the highly acclaimed 2003 book, *The Human Factor: Revolutionizing the Way People Live with Technology*, and was selected by Time Magazine as one of 25 Canadians under the age of 40 who is a "Leader for the 21st Century who will shape Canada's future."

Dr. Vicente is interested in the design of interfaces for complex sociotechnical systems, the study of expertise, and more broadly, in the analysis and design of complex work environments. He has conducted extensive research on cognitive work analysis, and human-computer interface design for complex sociotechnical systems. Kim has been invited to lecture in nine countries on four continents, including one lecture tour in Japan and another in Australia. He has acted as a consultant to industry and government, and authored the book, *Cognitive Work Analysis: Toward Safe, Productive, and Healthy Computer-based Work*, the first textbook in the area of cognitive work analysis. Currently, he serves on the editorial boards of the International Journal of Cognitive Ergonomics, Human Factors, and Theoretical Issues in Ergonomics Science, and on the Committee for Human Factors of the U. S. National Research Council/National Academy of Sciences.



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VICTORIA WARD is an Honorary Research Fellow at CASS Business School, City University London and has published extensively in the area of Knowledge Management with Clive Holtham, BULL Information Systems Professor of Information Management, at Cass Business School, City University London. She holds a degree in modern languages and art from Cambridge University.

Her firm, Sparknow Consulting, conducts extensive information and knowledge management in the public and private sector, paying particular attention to the role of dialogue, story, community and space in catalysing sustainable organisational change. The firm has also launched several projects for the European Knowledge Management Community's Special Interest Group on Utilization of Workplace Space. Ward's work focuses on the nature of, and relationships between, time, objects, dialogue, exchange, space and quality of thought inside and between organizations.

OLIVER WELLS holds positions at Imperial College London as Manager of the UbiCare Centre in Ubiquitous Computing for Healthcare and as administrator for the Imaging Sciences Centre, and is also a freelance consultant specialising in the Medical Systems industry.

After studying economics at Cambridge and then two years research at University College London, he joined Medelec Ltd in 1977 making electrodiagnostic equipment. Since then, he has held a number of marketing and general management positions in the Vickers Medical operating companies and the divisional headquarters, finally as the Divisional Marketing Director for the Medical Division of Vickers plc until its disposal at the end of 1997. Since then, Oliver has worked on a consultancy basis for a number of companies and organisations in the field of medical products and services. During this period, he has been the Sector Programme Manager for the EPSRC's Integrated Healthcare Technologies IMI programme; is Chairman of the Association of British Healthcare Industries' Medical Technology Policy Group, and has represented the medical device industry on various bodies including the Royal Academy of Engineering UK Focus on Biomedical Engineering, Science Council Science in Health Group and the Foresight Healthcare Panel. He is on the Steering Committee of IRC in Biomedical Materials at Queen Mary University of London.

ANDREW WOODSWORTH obtained a PhD in Physics from Queen's University and joined the National Research Council in 1975, developing real-time control and data acquisition systems for radio telescopes. He has also published numerous research papers in radio and optical astronomy.

Over the course of his career at NRC, Dr. Woodsworth has made a number of contributions to information technology. He was the first leader of the Canadian Astronomy Data Centre, which is one of only three sites world wide to host a complete data archive from the Hubble Space Telescope. Dr. Woodsworth was also responsible for the development of the first national internet in Canada, Ca*net.

More recently, Dr. Woodsworth was Canadian project manager for the international Gemini telescopes project, as well as Executive Director of C3.ca, the Canadian organization for high-performance computing. Dr. Woodsworth is currently Director General of the NRC Institute for Information Technology, a multi-site organization with locations in Ottawa, Fredericton, Moncton, Saint John, Sydney and Gatineau. His Institute is hosting one of the two initial appointees under the Artist in Residence Program run by NRC and the Canada Council for the Arts.

GUANG ZHONG YANG, PhD served as a senior and then the principal scientist of the Cardiovascular Magnetic Resonance (CMR) Unit, Royal Brompton Hospital before joining Imperial College in 1999. He is now head of the Visual Information Processing (VIP) research group at the Department of Computing and Chair in Medical Image Computing. Yang's current research focuses on Medical Image



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Computing, Simulation and Augmented Reality, Computational Vision and Image Processing, and Perceptual Intelligence.

The major strength of Dr. Yang's research group has been built on their extensive collaboration with leading clinical research centres such as the Cardiovascular Magnetic Resonance (CMR) Unit of Royal Brompton Hospital, Division of Surgery of St Mary's Hospital, and Division of Neuroscience at Charing Cross Hospital. This area of interdisciplinary research has flourished over the last few years and has resulted in a large number of research publications in prestigious academic journals. Yang's main research effort includes: perfusion with tracer kinetic modeling with cardiac MR; locally focused imaging and its applications; real-time interactive imaging and novel imaging sequence design for CMR; and modeling of intrinsic cardiac mechanics with MR velocity phase mapping.

ABSTRACTS

MONDAY MORNING: MARCH 22, 2004: 8:55-10:40

"UBIQUITOUS HEALTH TECHNOLOGIES: HOW DOES "PLACE" MATTER?"

Speaker A: Guang Zhong Yang: "Ubiquitous Health Technologies: The Research Opportunities to 2010."

Dept. Head, Visual Information Processing Group, Department of Computing, Imperial College, London.

Shorter hospital stay and better community care is set to be the future trend of health care. Providing specialist service at a local level, however, is difficult, considering the relative infrequency with which a particular disease, or a combination of diseases, may be encountered by the typical general practitioner. Such schemes must be underpinned by a strong and intelligent information link between patients and specialist centres, which monitors the status of the patient through non-invasive or implanted sensory devices so as to provide early warnings of potential problems. With demographic changes associated with the aging population and the increasing number of people living alone, such information exchange is crucial for maintaining the mobility and improving the quality of life for older people. This presentation outlines some of the major opportunities as well as technical challenges for ubiquitous healthcare technologies. The talk will pay particular emphasis on ubiquitous monitoring environment for wearable and implantable sensors (UbiMon) to highlight the need of moving from episodic medicine to patient management strategies that allow the capturing of transient abnormalities.

As an example, many cardiac diseases are associated with episodic rather than continuous abnormalities such as transient surges in blood pressure, paroxysmal arrhythmias or induced or spontaneous episodes of myocardial ischaemia. These abnormalities are important but their timing cannot be predicted and much time and effort is wasted in trying to capture an "episode" with controlled monitoring. Important and even-life threatening disorders can go undetected because they occur only infrequently and may never be recorded objectively. High risk patients such as those with end-stage ischaemic heart disease or end-stage myocardial failure often develop life threatening episodes of myocardial ischaemia or ventricular arrhythmia. These episodes, if reliably detected would lead to better targeting of potentially life saving but expensive therapies. With the emergence of miniaturised mechanical, electrical, biochemical and genetic sensors, there is likely to be a rapid expansion of biosensor use over the next ten years with corresponding reduction in size and cost. This will facilitate continuous wireless monitoring, initially of at-risk patients but eventually screening an increasing proportion of the population for abnormal conditions.

The presentation also highlights some of the parallel developments in imaging, molecular medicine, and minimal access surgery that are synergistic to ubiquitous healthcare.



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Speaker B: Pascale Lehoux: "Between Everywhere and Nowhere, the Inescapable Emplacement of Technology."

HCTP Mentor & Chercheure associée au Groupe de recherche interdisciplinaire en santé, Université de Montréal.

Now that health and social care are increasingly delivered in non-traditional settings, one major challenge is to redeploy socio-technical networks that have been traditionally designed around hospitals. In this presentation, relying on recent work with colleagues from the HCTP program, I wish to focus on two key features of the technology-in-practice perspective (Timmermans & Berg, 2003) that help define how technologies act as inescapable mediators in the construction and reproduction of lay and professional identities (Berg, 1997; Pasveer, 1989), and in the emplacement of power relations in health and social care.

First, the technology-in-practice perspective has been inspired by ethnographic studies looking at what technologies do, what they help accomplish in daily practices. Scholars have shown that several 'mundane' technologies (band-aid, tests, masks, corridors, elevators, coffee machines) —in defiance of the usual preoccupation with high-tech devices—, contribute profoundly to the structuring and localizing of health and work practices by configuring how people interact, share information and comply (or not) with established rules (Woolgar, 1991).

The second key feature of the technology-in-practice perspective is to recognize that technology always emerges from, and operates within, heterogeneous networks made of various people (designers, shareholders, manufacturers, users) and technologies (mechanical or electrical components, materials, support systems, built environment, etc.) (Latour, 1988; 1989). Health technologies are necessarily embedded in relation to other tools, practices, and social groups, and it is through their location in these networks that diagnostics, treatments or health promotion interventions are made possible in health and social care (Timmermans and Berg, 2003). In particular, I will show how the networks act as means for re-distributing knowledge, skills and duties between humans, and between humans and technologies (Akrich, in Latour, & Lemonnier, 1994, p.127). Recognizing the inescapable emplacement of technology opens us new avenues for place-sensitive research.

Moderator: Geoff Fernie: "How Does 'PLACE' Matter in the Development and Deployment of Health Care Technologies?"

HCTP Mentor; VP Research, Toronto Rehabilitation Institute.



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MONDAY AFTERNOON: MARCH 22, 2004: 1:30-3:05
"TECHNOLOGIES IN/ON/OF THE BODY: HEALTH, SELF, PERSONHOOD"

Speaker A: Derrick De Kerckhove, "The Body Electric Online: e-Addiction, Penelope Complex, e-Lag and Other e-Pathologies."

Director, McLuhan Program in Culture & Technology; Professor, Department of French, University of Toronto.

All our technologies affect our bodies, if only by imposing patterns of use that can occasionally erupt into "dis-ease". Our very being is subjected to permanent editing and re-editing by our own inventions. Because of the spate of electronic technologies, we must lead accelerated and increasingly complexified lives. As the SARS crisis, - a media pathology even more than a clinical one - demonstrated, the whole world is imploding upon us, with consequences that can affect the social body, just as readily as the personal one. Because they are electrical, but also cognitive, E-technologies in general and on-line ones in particular entertain intimate relationships, not only with our bodies, but also with our minds. Cellular phones and networked media challenge our cognitive as well as our physical well-being. I will not address medical issues that have already been identified such as physical discomfort arising from overuse of a desktop computer, a matter best left to ergonomics. Nor will I approach the vexed question of radiation effects of mobile telephony. I leave that to specialists. Rather, I want to address issues that have not yet surfaced into mainstream health research, things such as addiction to e-mail and neurotic or genuine anxieties over viral attacks, invasion of privacy. Information overload has been identified but what can we say about the anxiety experienced by the accumulation of unanswered e-mail ? Must we forever be "e-lagged", out-of-sync, out of time, out of place, deterritorialized, always on the move, eternally "displaced persons" ?

This talk will spring from personal, not clinical observations arising from the social use of e-technologies. The objective of the following workshop or discussion could be to find out whether the number and the severity of our new e-ailments could justify the creation of something like a Centre for Research in Technopathology.

Speaker B: Nikolas Rose: "The Politics of Life in the 21st Century."

Convenor, Department of Sociology, London School of Economics and Political Science; Director, BIOS Centre.

Intended as a contrast to Michel Foucault's paper 'the politics of health in the eighteenth century', I argue that the field of our contemporary biopolitics, is not that of health – delimited by the parameters of illness and cure – but of life itself. This threshold does not lie in any single event: the epistemological, ontological and technical re-shaping of medical perception and practice comes about through the interconnections of changes along a series of dimension. I identify five planes along which mutations can be identified. While wary of epochal claims, and recognizing that each of these dimensions has continuities as well as shifts, I suggest that, from the point of view of the present, a threshold has been crossed in the new configuration formed by these five lines of mutation, and that this is of importance for those, like myself, who try to write the history of possible futures. The five lines of mutation are:

Molecularization: life itself is now envisaged at the molecular level, as a set of intelligible vita mechanisms amongst molecular entities that can be identified, isolated, manipulated, mobilized, recombined.



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- Optimization:* the emergence of an expanded field for the operation of biomedical knowledge designated by two linked terms – susceptibility and enhancement. New biological knowledge is intrinsically linked to the will to intervene.
- Subjectification:* biological citizenship: the formation of new conceptions of citizenship – of the duties, obligations, rights, expectations of human beings in relation to their sickness, and also to their life itself; somatic individuality: reshaping the ways in which individuals are brought to understand and act upon themselves as corporeal beings in order to improve themselves.
- Expertise:* the new politics of life has generated a problem space populated by new forms of expertise – somatic expertise - the most remarkable of which is that of bioethics itself. What is the question to which bioethics appeared, today, to be an almost indispensable part of the answer?
- Economies of Vitality:* energized by the search for biovalue, novel links have formed between truth and capitalization, the demands for shareholder value and the human value invested in the hope for cure and optimality.

Moderator: Elizabeth Harvey: "Where is the Human Body in Technology-Mediated Health Care? What is Health Care for the Technology-Mediated Human Body?"

HCTP Mentor; Professor, Department of English, University of Toronto.

TUESDAY MORNING: MARCH 23, 2004: 8:55-10:40
"TECHNOLOGIES & TRANSLATIONS: SUSTAINING INTERDISCIPLINARITY"

Speaker A: Brian Cantwell-Smith: "Inter-, Cross-, Multi-, and Trans- : Life Beyond Disciplinarity."

Dean, Faculty of Information Studies, University of Toronto.

Universities are awash in inter-disciplinary, cross-disciplinary, multi-disciplinary, and trans-disciplinary programs. Some people view these efforts as "new and emerging" disciplines. That leads naturally to an effort to "disciplinise" the new projects (for example, in such cases as science studies, cognitive science, and women's studies). I will argue that these disciplinising efforts are mistaken, and weak. Instead, I will suggest, we are undergoing a more profound shift in intellectual history: a move away from distinguishing intellectual pursuits by *discipline* or *method* entirely, towards an approach that focuses on *problems* or *phenomena*. This reconceptualisation will be backed by theoretical analysis and concrete example. It will also be defended, as representing a positive development, as the world grapples with increasingly complex problems.

Speaker B: Andrew Woodsworth: "Artist in Residence Program, National Research Council & Canada Council for the Arts."

Director General, Institute for Information Technology (National Research Council of Canada).

Two years ago, the National Research Council and the Canada Council for the Arts initiated the Artists in Residence program. This provides funding for professional artists to spend time in NRC labs, working on projects that are exciting both to the artists and to the scientists who host them. As Rich Gold of Xerox PARC noted, "One of the interesting things that NRC is discovering, as are other research centres, is that the interesting work is occurring at the intersection of multiple disciplines rather than at their centres... We find that similar creative and innovative sparks fly when the sciences meet up with another deep intellectual tradition, that of art."

This talk will describe the program, the work undertaken by the first four artists in residence to be appointed, and some of the issues that had to be considered.

Moderator: Gale Moore: "How Can Information and Communication Technologies Enrich Interdisciplinary Health Research?"

Director, Knowledge Media Design Institute, University of Toronto.

TUESDAY AFTERNOON: MARCH 23, 2004: 1:30-3:05
"TECHNOLOGIES @ WORK: KNOWLEDGE & COMPLEXITY IN HEALTH CARE"

Speaker A: Kim Vicente: "Health Care Technology for Humans".

Director, Cognitive Engineering Laboratory; Professor, Department of Mechanical and Industrial Engineering, University of Toronto.

The thesis of this presentation is that health care technology should be designed to address an important human or societal need and should be adapted to what we know about people, whether it be at the level of individual workers, management, organizations, regulators, or government. From this perspective, technology is a means to an end, not an end in itself, and it will only have a positive impact to the extent to which it is tailored to human needs and capabilities. Several examples illustrating the value of this perspective will be provided. As for the future, I believe that health care technology research and development should focus on putting people first. This may seem like a modest and straightforward goal, but it is:

- a) unorthodox because it can conflict with the view that the sole answer to our problems is more sophisticated technology; and
- b) b) challenging because it requires interdisciplinary interaction between the technical, human, and social sciences.

Speaker B: Victoria Ward: "Slow Knowledge: Technology, Change, and the Health Care Setting"

Principal, SparKNOW Consultancy; London.

This working paper is one in a series that considers the importance of slowness, rhythm, and tempo in organizations. In modern organizations people feel both 'out of time' in the sense that they have no time, and they feel out of synch with what goes on, and 'out of place' in the sense that they do not belong or no longer feel as though they inhabit the organization as they spend so much time as nomads in it, moving from place to place with their workshell (mobile, blackberry, computer) in their rucksacks. We have three main concerns in the paper and associated presentation:

1. What shape is work starting to take, and how are the relationships between work and workplace unfolding?.
2. What speed should work be done at? Are there different tempos for information work and knowledge work, and what might this imply for healthcare settings?
3. How can tiny objects, like a postcard for example, be used as an interface, or as a way of creating tiny invisible cubicles for private conversation, as well as devices to reorganize time and space in a way that can contribute to the participatory design and redesign of workspace?

Please note that we do regard this as a working paper, and that what is presented here draws directly on some of the other papers referenced. Ideas and contributions are most welcome and the sourced will be acknowledged.

Moderator: Joan Eakin "How Should Technologies Shape the Spacing & Timing of Health Care Work? "

Professor, Department of Public Health Sciences, University of Toronto

MONDAY MORNING: MARCH 22, 2004: 8:55-10:40
"UBIQUITOUS HEALTH TECHNOLOGIES: HOW DOES "PLACE" MATTER?"

Speaker A: Guang Zhong Yang: "Ubiquitous Health Technologies: The Research Opportunities to 2010." (Head, Visual Information Processing Group, Dept. of Computing, Imperial College, London).

Speaker B: Pascale Lehoux: "Between Everywhere and Nowhere: The Inescapable Emplacement of Technology." (HCTP Mentor & Chercheure associée au Groupe de recherche interdisciplinaire en santé, Université de Montréal).

Moderated by: Geoff Fernie (HCTP Mentor & VP Research, Toronto Rehabilitation Institute).

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MONDAY AFTERNOON: MARCH 22, 2004: 1:30-3:05
"TECHNOLOGIES IN/ON/OF THE BODY: HEALTH, SELF, PERSONHOOD"

Speaker A: Derrick De Kerckhove: "The Body Electric Online: e-Addiction, Penelope Complex, e-lag and Other e-Pathologies." (Director, McLuhan Program in Culture & Technology; Professor, Department of French, University of Toronto).

Speaker B: Nikolas Rose: "The Politics of Life in the 21st Century." (Convenor, Department of Sociology, London School of Economics and Political Science; Director, BIOS Centre).

Moderated by: Elizabeth Harvey (HCTP Mentor & Professor, Dept. of English, University of Toronto).

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TUESDAY MORNING: MARCH 23, 2004: 8:55-10:40
"TECHNOLOGIES & TRANSLATIONS: SUSTAINING INTERDISCIPLINARITY"

Speaker A: Andrew Woodsworth: "The Artist in Residence Program, National Research Council & Canada Council for the Arts." (Director General, NRC Institute for Information Technology).

Speaker B: Brian Cantwell-Smith: "Prototyping the Future in the Information Age." (Dean, Faculty of Information Studies, University of Toronto).

Moderated by: Gale Moore (HCTP Mentor & Director, Knowledge Media Design Institute, University of Toronto).

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TUESDAY AFTERNOON: MARCH 23, 2004: 1:35-3:05
"TECHNOLOGIES @ WORK: KNOWLEDGE & COMPLEXITY IN HEALTH CARE"

Speaker A: Kim Vicente: "Health Care Technology for Humans." (Director, Cognitive Engineering Laboratory; Professor, Department of Mechanical and Industrial Engineering, University of Toronto).

Speaker B: Victoria Ward: "Space and Slow Knowledge: Technology, Change, and the Health Care Setting." (Principal, Sparknow Consultancy, London).

Moderated by: Joan Eakin (Professor, Department of Public Health Sciences, Faculty of Medicine, University of Toronto).