Centre for
Information Systems Assurance
Mission Statement

The University of Waterloo Centre for Information Systems Assurance (UWCISA) seeks to identify, create and deliver research addressing information systems governance, control and assurance issues; to support and promote the delivery of educational activities and materials related to such issues; to communicate and promote information systems governance, control and assurance issues that are important to professionals working in these areas; and to support and promote interaction on those issues among practitioners, educators and students.

Background

UWCISA is an administrative sub-unit within the Centre for Accounting Education and Research (CARE) at the University of Waterloo. UWCISA was established in 1998 by three founding sponsors: the UW School of Accountancy, the Canadian Institute of Chartered Accountants, and the Information Systems Audit and Control Association. The sponsors’ objective was to improve the quality of education; to increase dialogue between practitioners and academics; to improve use in practice; to expand research in information systems assurance, governance and control; and to foster a continuing, close working relationship among the sponsors and other partners with an interest in information systems assurance, governance and control. The Centre invites and welcomes new partners to share in its mission.

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The Last Word

The University of Waterloo Centre for Information Systems Assurance (UWCISA) seeks to identify, create and deliver research addressing information systems governance, control and assurance issues; to support and promote the delivery of educational activities and materials related to such issues; to communicate and promote information systems governance, control and assurance issues that are important to professionals working in these areas; and to support and promote interaction on those issues among practitioners, educators and students.
To the Board of Directors:

I am pleased to present this Report on the operations and activities of the University of Waterloo Centre for Information Systems Assurance (UWCISA) during 2003, our sixth year of operation.

Our third bi-annual Symposium was the highlight of the year. Research papers discussed at that event will be published in the *International Journal of Accounting Information Systems* in the Summer of 2004. We are already planning our 2005 Symposium, and we invite participants and presenters to join us. The theme will be *Integrity, Security, Privacy and Trust in an IT Context*.

During the year we completed the first phase of our IT Audit Education Project in partnership with PricewaterhouseCoopers on behalf of the National Accounting Institute of China in Beijing. Work continues on phase two.

We also completed a major research project funded by ISACA on Information Integrity, and we are now working on a major research project on A Secure IT Infrastructure for E-Commerce, funded by the CICA.

During the coming year we will reach out to new partners to share in our mission.

I thank the Centre’s Board Members and founding sponsors for their continued support. I look forward to working closely with all of you in future.

Respectfully,

J.E. Boritz, PhD, FCA, CA•CISA, CA•IT
Director
HOSTING THE CENTRE’S ISA PORTAL

UWCISA’s website, www.arts.uwaterloo.ca/ACCT/uwcisa, serves as the Centre’s ISA Portal. During 2003 it was continuously maintained and enhanced. It includes calls for papers and research proposals, a chat room, a resources section, a number of links and downloadables, and order forms.

UWCISA’s Annual Reports are posted to the website and summarize the Centre’s year-by-year activities. The 2002 Report, produced in June 2003, differed from the usual pattern by offering a comprehensive five-year review of activities. As is the custom, it was disseminated both electronically and in hardcopy formats.

FUNDING AND SUPPORTING CURRENT AND FUTURE ACTIVITIES

UWCISA joined with a number of universities and private sector entities in a consortium led by the University of New Brunswick and Industry Canada to propose creating a national network for research in privacy, security and trust. While funding for this initiative is not yet available, the informal links already created provide a platform for future collaboration on funding requests.

During the year a UWCISA fundraising committee was established under the leadership of UW alumnus Doug Johnson, VP IT Audit at RBC. The committee is exploring fundraising options to help the Centre establish a full-time staff to conduct its research, education and outreach activities on a long term, sustainable basis.

THOUGHT LEADERSHIP ON ISA

The Centre provided thought leadership in several areas during 2003.

COMPETENCY-BASED EDUCATION

The Centre completed a project commissioned by the Education Committee (EDCOM) of the International Federation of Accountants (IFAC) to update International Guideline 11 on Information Technology for Professional Accountants (previous editions: 1995, 1998).
Canadian Accounting Perspectives, a journal of the Canadian Academic Accounting Association, published a paper co-authored by Efrim Boritz and Carla Carnaghan that resulted from the above project. See “Critical Review of Competency-Based Education” in Vol. 2, No. 1, 2003, pp. 7-42.

INFORMATION INTEGRITY

The Centre’s work on this topic provides a comprehensive framework for addressing information integrity issues from both a control and an assurance perspective. (A monograph completed for ISACA is awaiting publication.) A paper resulting from this effort, entitled “Core Concepts of Information Integrity,” was presented at the UWCISA 2003 Research Symposium and is slated for additional presentations in 2004.

SECURITY

The Centre’s work on security of information transmitted over the Internet has implications for XML-based information exchanges of financial records and, potentially, of health records as well. This work led to one publication in 2003 and another forthcoming in 2004, plus two working papers.

- “Infrastructure Requirements for Assurance on XBRL Documents.”

2003 RESEARCH SYMPOSIUM SESSIONS

GOVERNANCE, TRANSPARENCY AND INTEGRITY: THE ROLE OF IT


Black Box Monitoring of Audits  Moderator: Linda Robinson, U. of Waterloo. Presenters: Michael Alles, Alex Kogan and Miklos Vasarhelyi, Rutgers U. Discussants: Paul Steinbart, Arizona State U.; Eckhardt J. Kriel, Ernst & Young


XBRL is Heres Caseware Software Demonstration  Moderator: Won No, U. of Waterloo. Presenter: Robert Cuthbertson, Caseware


Invited Research Reports: IIA Study on Impact of SOX on Internal Audit Practice  Moderator: Natalia Kotchetova, U. of Waterloo. Presenter: Glen Gray, California State U. Discussants: Urton Anderson, U. of Texas at Austin; John Fraser, Sun Life


2003 EDUCATION CONFERENCE

SPONSORING RESEARCH SYMPOSIA, CONFERENCES, WORKSHOPS

UWCISA conducted its third bi-annual Research Symposium in October 2003. See program, page 3. The theme was Governance, Transparency and Integrity: The Role of Information Technology. This event, held in Toronto and attended by academics and practitioners from across North America, was sponsored by CICA, ISACA, the Information Integrity Coalition and the *International Journal of Accounting Information Systems* (IJAIS). Research papers from this event will be published with discussants’ comments in *IJAIS* in Summer 2004.

The Centre also held its third bi-annual Education Conference in conjunction with the Research Symposium, on the theme of IT Competencies for Assurance Practitioners. This event was sponsored by CICA, the Gordon H. Cowperthwaite Centre for Accounting Education, and the Centre for Business, Entrepreneurship and Technology at the University of Waterloo. Presenters were M. Greenstein, D. Wilkinson and A. Lord; discussants were C. Carnaghan and B. Leader.

The Centre conducted two workshops in conjunction with the ISACA-funded Information Integrity Project. These gatherings were held in Toronto (April) and Chicago (June), and are summarized in “Core Concepts of Information Integrity.” See page 3.

In June 2003 UWCISA members participated in a two-day XBRL workshop held at the CICA. Representing the Centre were Efrim Boritz, R. Sundarraj, Malik Datardina and Won No.

DOCUMENTING BEST PRACTICES

In 2003 UWCISA inaugurated or continued several activities in this category. The Centre completed a study on Information Integrity on behalf of ISACA and began executing a project on A Secure IT Infrastructure for E-Commerce, funded by CICA.

Darren Charters represented UWCISA on the Ontario Privacy Commissioner’s Advisory Group. He authored a report titled *Traversing Privacy Minefields* that addresses the application of the AICPA/CICA privacy framework to Canada’s Personal Information and Electronic Documents Act (PIPEDA). *This report is available from the Centre.*
FUNDING SPECIFIC RESEARCH AND EDUCATION PROJECTS

FELLOWSHIPS AND SCHOLARSHIPS

Malik Datardina (MAcc, CA•CISA), a Visiting Fellow with the Centre (2002-04), continued work on Information Integrity and Secure IT Infrastructure for E-Commerce projects. See sidebar, page 4.

Won No, a University of Waterloo PhD student and recipient of a UWCISA Research Scholarship, undertook work on XARL (Extensible Assurance Reporting Language). He co-authored several papers as noted in the section on Thought Leadership.

In 2003 UWCISA arranged for Ed O’Donnell of Arizona State University to become a Research Fellow in Spring 2004. He will contribute to research projects, create online curriculum materials, and develop seminars on IT governance. This Fellowship is sponsored by grants from UWCISA, the UW Faculty of Arts, and the Centre for International Governance Innovation.

Fellowships and Scholarships are available. Please contact the Director.

CONDUCTING AND FUNDING RESEARCH PROJECTS

Throughout the year the UWCISA website displayed a Call for ISA Research Proposals, aimed at attracting submissions from academics and practitioners.

Efrim Boritz presented a paper on “Governance, Transparency, Integrity: The Role of Information Technology” at the 10th annual AIS conference in Phoenix, AZ (February). Boritz and Malik Datardina presented “Bubbles Burst: a Review of Investment Bubbles Throughout History” at the conference of the Administrative Sciences Association of Canada in Halifax (June). This paper won an honourable mention at that event.

Boritz and Won No presented “Infrastructure Requirements for Assurance on XBRL Documents,” at the International Conference on XBRL, University of Kansas (October). Boritz and No also completed a working paper on “Security Infrastructure Requirements for XML Documents on the Internet” to be submitted to the University of Maryland’s forum on Financial Systems and Cyber Security: A Public Policy Perspective, co-sponsored by the Journal of Accounting and Public Policy.

Research funding is available. Please contact the Director.

DEVELOPING ISA CURRICULUM

Efrim Boritz participated in the ISACA Model Curriculum Project, which aims to develop a common, internationally recognized, model curriculum for studies leading to the CISA qualification.

Boritz, who is a member of the CICA IT Alliance and co-chair of its education committee, served on the task force set up by the Alliance to develop a competency map for the CA•IT designation, in collaboration with the AICPA committee charged with the same responsibility for AICPA’s CITP designation.
## DEVELOPING COURSES, CASES AND OTHER TEACHING MATERIAL

In Fall 2003 UWCISA completed preparations for Phase 1 of a project aimed at developing a training program in IT for Auditors for the National Accounting Institute of China in Beijing, an initiative undertaken in partnership with PricewaterhouseCoopers and funded by the World Bank. Work continues on Phase 2. See sidebar.

UWCISA launched three online IT courses through its Learning Centre: (1) Cyberlaw [ACC 623], offered by Darren Charters (Winter 2003); (2) System Reliability [ACC 621] given by Efrim Boritz, Malik Datardina and Don Sheehy (Winter 2003); (3) E-Commerce [ACC 622], offered by Boritz, assisted by Datardina (Spring 2003).

A team led by alumnus Scott Shannon, a partner in Grant Thornton’s Hamilton, Ontario office, conducted a workshop on Caseware’s IDEA software.

UWCISA also began developing an IT Security course, with help from Gary Baker, a partner at Deloitte & Touche and with funding from the Gordon H. Cowperthwaite Centre for Accounting Education.

## OPERATING THE LEARNING CENTRE

Won No took charge of developing UWCISA’s Learning Centre, to create an e-learning platform to meet the needs of people seeking a CISA or BIT specialization or other courses to be offered on demand in future. The Centre’s first use was for the CA School of Business (CASB).

## SHARING MATERIAL WITH EDUCATORS

The UWCISA website contains the latest text, case materials and other items for various Centre-supported courses.

In 2003 the Centre produced the 12th edition of its long-running publication, *Computer Control and Audit Guide (CCAG)*. (The Centre has already sold 500 copies of this edition to universities throughout Ontario.) A CCAG order form and a list of customers are posted on the UWCISA website.
Future Plans

In the next twelve months, UWCISA will maintain its current activities in research, education and communication, and will undertake new initiatives as well. Plans for each key category are outlined below.

HOSTING THE CENTRE’S ISA PORTAL

UWCISA plans to update the site in 2004 to give it a new look and new functionalities. Your comments are welcome.

FUNDING AND SUPPORTING CURRENT AND FUTURE ACTIVITIES

UWCISA’s fundraising committee will continue seeking ways to expand the funding base for the Centre.

THOUGHT LEADERSHIP ON ISA

UWCISA will monitor the possibility of reviving the proposal to create a national network for research in privacy, security and trust. See page 2 above.

SPONSORING RESEARCH SYMPOSIA, CONFERENCES, WORKSHOPS

UWCISA will organize and promote its fourth bi-annual Research Symposium and Education Conference, both slated for Toronto in October 2005. The theme of the Research Symposium will be Integrity, Privacy, Security and Trust in an IT Context. The focus of the Education Conference will be on instructional resources, including a case competition. The Centre will post program details on the website as they become available. Visit www.arts.uwaterloo.ca/ACCT/uwcisa.

DOCUMENTING BEST PRACTICES

UWCISA will complete the project on A Secure IT Infrastructure for E-Commerce and will start a new project to be announced. UWCISA will also distribute Darren Charters’s report on “Traversing Privacy Minefields.”

FUNDING SPECIFIC RESEARCH AND EDUCATION PROJECTS

FELLOWSHIPS AND SCHOLARSHIPS

UWCISA has arranged for a three-month visit to the University of Waterloo in Spring 2004 by Professor Ed O’Donnell of Arizona State University. He will help organize workshops on IT Governance at several conferences: IJ AIS in Scottsdale, AZ; Administrative Sciences Association of Canada (ASAC) in Quebec City; American Conference on Information Systems (AMCIS) in New York; and American Accounting Association Annual Conference in Orlando. The visit will be partly subsidized by the UW Dean of Arts and by a grant from CIGI (the Centre for International Governance Innovation).

UWCISA will make funds available for Visiting Fellows and doctoral students. For details, contact the Director.
**Research Fellow Gives IT Governance Seminars**

Ed O’Donnell, a Research Fellow in Spring 2004, will develop leading-edge seminars on IT Governance for presentation at several key conferences. “I hope these seminars will improve the visibility and understanding of the issues among academics,” O’Donnell explains, “and also benefit their teaching and their identification of future research projects.”

Presentations are slated for meetings of IJAIS, the Administrative Sciences Association of Canada, the American Conference on Information Systems, and the American Accounting Association.

O’Donnell will fulfill UWCISA’s commitment to the Centre for International Corporate Governance Innovation (CIGI), a co-sponsor of his Fellowship, by giving a presentation at a CIGI conference and by producing research papers on IT governance issues.

**Centre Will Research New Area**

“UWCISA will initiate research in a new area in 2004,” Carla Carnaghan has announced. “We’re going to examine alternative ways of representing business models and processes for use by auditors in risk assessment.”

Standard approaches require auditors to understand and critically evaluate, from a risk perspective, the models and processes that organizations use. Carnaghan will compare other ways of organizing the information – using diagrammatic representation – that could improve risk assessment.

UWCISA is seeking funding for the project from two sources: Deloitte & Touche (for one component of the research) and the KPMG/University of Illinois Business Measurement Program (for a separate component).

**RESEARCH PROPOSALS**

Academics and practitioners are invited to submit proposals for research projects on Information Systems Assurance. Funding of up to $10,000 Cdn is available per project. The Centre encourages proposals on Best Practices, IT Governance, Project Management, Privacy, Information Integrity, Continuous Process Monitoring, IS Quality, Software Certification and other areas of interest to the ISA community.

For Research Proposal Guidelines, contact the Centre.

**PRESENTATIONS AND PUBLICATIONS**

UWCISA personnel will continue making presentations on ISA issues to gatherings of academics and practitioners. Presentations scheduled for 2004, in addition to the IT Governance workshops, include: Seventh International Continuous Auditing Conference (Monaco); European Conference on Accounting Information Systems (Prague); a forum on Financial Systems and Cyber Security: A Public Policy Perspective at the University of Maryland; CAAA Annual Conference (Vancouver).


Efrim Boritz, Ed O’Donnell and Tony Read will prepare a paper on IT Governance issues for the International Journal of Accounting Information Systems. In addition, this team will produce a publication for the CICA’s 20 Questions series, addressing 20 Questions that CFOs Should Ask About IT.

**DEVELOPING ISA CURRICULUM**

Efrim Boritz will continue serving on ISACA’s Model Curriculum Task Force as well as the IT Alliance Board.

The Centre will publish information on ISACA’s Model Curriculum project as part of the special issue of IJAIS in Summer 2004.

**DEVELOPING COURSES, CASES AND OTHER TEACHING MATERIAL**

The Centre will complete the joint UWCISA-PricewaterhouseCoopers Project for the National Accounting Institute in Beijing that began in 2003. See above, page 6.
OPERATING THE LEARNING CENTRE

UWCISA will complete its course offering on System Reliability on behalf of the CA School of Business (CASB) in Winter 2004 and will repeat it in Fall 2004. The Centre will host an online E-commerce course in Spring 2004 to be taught by Gerald Trites, on leave from St. Francis Xavier University in Nova Scotia. He is lead author of *E-Business: A Canadian Perspective for a Networked World*, and numerous other books published by the CICA on the impact of IT on business.

Visiting Fellow Ed O’Donnell will develop an online course on IT Governance on behalf of UWCISA.

UWCISA will complete development of the IT Security course. *See above, page 6.*

SHARING MATERIAL WITH OTHER EDUCATORS

The Centre will leverage the content of *Computer Control and Audit Guide (CCAG)* to develop two new books: (1) IT Governance and System Reliability, and (2) IT Audit/Assurance and Computer-Assisted Audit Techniques. Centre staff will also begin preparing the 13th edition of *CCAG* for release in 2005.

CIGI Co-sponsors Fellowship

The Centre for International Governance Innovation (CIGI) is a co-sponsor of a UWCISA Research Fellowship that will be held by Ed O’Donnell in Spring 2004.

CIGI, a new global research centre adjacent to the University of Waterloo, is charged with studying, advising and educating scholars, practitioners and governments. Its focus is on the character and desired reforms of the multilateral system, particularly within economic and financial governance.

By joining with UWCISA and the UW Faculty of Arts to sponsor the Fellowship, CIGI reflects its dedication to a collective approach for finding innovative, practical solutions to governance challenges.

For CIGI information, visit [www.cigionline.ca](http://www.cigionline.ca)

THE LAST WORD

We welcome inquiries, suggestions and comments!

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