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.

Board of Directors

William Swirsky, MBA, FCA
Vice-president, Professional Affairs, CICA;
Chair, UWCISA

J. Efrim Boritz, PhD, FCA, CA•CISA, CA•IT
Ontario Chartered Accountants’ Chair in Accounting, University of Waterloo;
Director, UWCISA

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Alister Mason, PhD, FCA, FCMA
Director, School of Accountancy, University of Waterloo

Robert Parker, MBA, FCA, CISA, CMC
Partner, Deloitte & Touche, Toronto
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 2004, our seventh year of operation.

During the year we completed the second of three phases 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 three. We saw our project on *Managing Enterprise Information Integrity: Security, Audit and Control Issues* published by ISACA. We completed a major research project on A Secure IT Infrastructure for E-Commerce, funded by the CICA. We extended our research into XBRL, producing several papers on assurance related topics in this area. We held several workshops on IT Governance and completed work on a related paper and course.

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 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 and 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 2004 it was significantly overhauled. 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. During the year, we added several new pages as summarized below.

Privacy

Darren Charters represented the Centre on Ontario Privacy Commissioner’s advisory group. He completed a report comparing the AICPA/CICA Enterprise Privacy Framework against PIPEDA (Personal Information Protection and Electronic Documents Act). His report Traversing Privacy Minefields is available through the ISA portal.

Phishing/Identity Theft

Rudy de Haas completed a project to summarize key issues to publicize the threat posed by this alarming trend. The report is available through the ISA portal.

FUNDING and SUPPORTING CURRENT and FUTURE ACTIVITIES

UWCISA’s funding comes from operating grants provided by our generous sponsors, research grants from various agencies and publication revenues. UWCISA is exploring new 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. We welcome new partners to help us achieve the Centre’s mission.

THOUGHT LEADERSHIP on ISA

The Centre provided thought leadership in several areas during 2004.

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.

- Paper on “Core Concepts of Information Integrity” presented at ECAIS (European Conference on Accounting Information Systems) in Prague in April 2004. The paper has been accepted for publication in International Journal of Accounting Information Systems.
Security

A Secure IT Infrastructure for E-Commerce

The purpose of this study was to answer the following questions:

• What is an IT infrastructure?
• How does an IT infrastructure vary with type of e-business model?
• What are the components of a security infrastructure?
• What is the relationship between a security infrastructure and an IT infrastructure for e-commerce?
• How would these principles affect security strategy?

The project was invited to be presented at the CICA/IIA/ISACA Conference on IT Audit, Governance and Control April 4, 2005.

Continuous Auditing

Papers on continuous assurance and data trust issues in XBRL were presented at the International Continuous Auditing Conference in Monaco in March 2004 and Vancouver in May 2004.

XBRL/XARL

The Centre’s work on XML-based information and assurance on that information has led to the following publications by Efrim Boritz and Won No (shown at right):

• In addition, a new paper on “Infrastructure Requirements for Assurance on XBRL Documents” has received provisional acceptance in JETA (Journal of Emerging Technologies and Accounting.)

IT Governance

Issues Senior Management Should Address to Align IT Investments With Business Objectives

The purpose of this project was to identify IT Governance issues that senior executives should address. The research team included Efrim Boritz, Ed O’Donnell of Arizona State University and Tony Read of Read & Associates.

The work has been accepted by CICA’s ITAC (Information Technology Advisory Committee) for publication as a whitepaper. It was also invited for presentation at the CICA/IIA/ISACA Conference on IT Audit, Governance and Control April 4, 2005.

20 Questions That CFOs Should Ask About Their IT Investments

The purpose of this project in progress is to produce a brochure identifying key issues that CFOs should address about IT Investments. Completion is expected in summer of 2005. Funding is being provided by CICA.
SPONSORING RESEARCH SYMPOSIA, CONFERENCES, WORKSHOPS

IS Security
During the year, in conjunction with its project by the same name, the Centre organized a workshop on A Secure IT infrastructure for E-Commerce on April 28, 2004 with the help of ISACA Toronto chapter and CICA who provided the facilities for the workshop.

Computer-Assisted Auditing Techniques
A team led by alumnus Scott Shannon, a partner in Grant Thornton’s Hamilton, Ontario office, conducted a workshop on Caseware’s IDEA software for University of Waterloo Students.

IT Governance
Workshops on IT Governance were held as follows:

- AISRS (Accounting Information Systems Research Symposium) in Scottsdale Feb 20
- ASAC (Administrative Sciences Association of Canada) annual conference in Quebec city June 8
- AMCIS (American Conference on Information Systems) in New York Aug 7
- AAA (American Accounting Association) annual conference in Orlando Aug 10.

Waterloo’s CIGI (Centre for International Governance Innovation) helped underwrite part of the cost of holding these workshops.

ISA Symposium Planned for 2005
During summer 2004 the proceeding of the 2003 symposium were published as a special issue of IJAIS (International Journal of Accounting Information Systems) July 2004.

The theme for the 2005 symposium that was approved by the Board is: Integrity, Privacy, Security & Trust in an IT Context. A case competition has been added to encourage the development of ISA cases.

DOCUMENTING BEST PRACTICES

A Secure IT Infrastructure for E-Commerce
The purpose of this study is described on page 3 of this report.

Research team is Efrim Boritz and Malik Datardina. Funding for this project was provided by CICA.

The project was completed and is in final stages of review by CICA prior to publication. It was invited to be presented at the CICA/IIA/ISACA Conference on IT Audit, Governance and Control April 4, 2005.

SysTrust and DataTrust
The Centre’s director participated in a workshop sponsored by the AICPA and CICA on future services in this area.
IT Governance: Issues Senior Management Should Address to Align IT Investments With Business Objectives

The purpose of this project was to identify IT Governance issues that senior executives should address. The research team included (left to right) Tony Read of Read & Associates, Efrim Boritz and Ed O’Donnell of Arizona State University.

The work has been accepted by CICA’s ITAC (Information Technology Advisory Committee) for publication as a whitepaper. It was also invited for presentation at the CICA/IIA/ISACA Conference on IT Audit, Governance and Control April 4, 2005.

Presentation Methods To Support Business Risk Assessments

The purpose of this project is to:

1) To summarize approaches to representing entity business models using diagrams for enhanced business risk analysis.

2) To interview partners of major firms about how such diagrams could be used for risk assessment.

3) To create hypotheses for testing findings in an experimental setting and submit for additional funding consideration to support such testing.

Research team is Efrim Boritz, Carla Carnaghan (shown above) and Paulo Alencar (Computer Systems Group, UW) and with support from Gary Baker of Deloitte & Touche.

Funding for this project is provided by the KPMG/University of Illinois Business Measurement Program.

Documenting Business Processes

Objectives:

1) To summarize approaches to documenting business processes;

2) create illustrative case based on practice;

3) interview audit team members about their views on alternative presentation.

Research team is Efrim Boritz and Carla Carnaghan with support from Gary Baker of Deloitte & Touche. Funding for this project is provided by the CAAA/D&T Research fund.

IT Controls for SOX

The objective of this project is to summarize and match IT control objectives contained in publication such as COBIT, ITCG, BS7799, and SysTrust against SOX-PCAOB-COSO requirements. Researcher Malik Datardina expects the project to be completed in summer of 2005.

DEVELOPING COURSES, CASES, and OTHER TEACHING MATERIAL

Cases

A case competition is being held in conjunction with the Symposium. Financial incentives are being provided in the form of prizes totaling $5,000.

Cases on implementation of COSO-COBIT-IT Controls for Sarbanes Oxley are planned for development.
OPERATING THE LEARNING CENTRE

For a preview of the Learning Centre please visit http://uwcisa.uwaterloo.ca

Online courses currently available or in progress:

- Online System Reliability course offered in Fall 2004 for CASB (CA School of Business).
- Cyberlaw course offered in Winter 2004 by Darren Charters.
- E-commerce course offered by Gerald Trites in Summer 2004.
- Online course on IT Governance developed by Ed O’Donnell.
- System Security course under development with help from Gary Baker of Deloitte and funding from Gordon H. Cowperthwaite Centre.

ISA/BIT Diploma Programs

The online ISA diploma program was reviewed June 10-11, 2004 by OCGS (Ontario Committee on Graduate Studies) and approved Nov 4, 2004. Work is now underway to launch the program in 2005.

The table at the right outlines the courses for the two options.

ISACA Model Curriculum Project

The Centre’s director participated in this project. Information about the model curriculum is contained in a report by Alan T. Lord of Bowling Green State University that was published in proceedings of the 2003 Symposium.

SHARING MATERIAL with OTHER EDUCATORS

The UWCISA website contains the latest text, case materials and other items for various Centre-supported courses. In 2004 the Centre sold 250 copies of the 12th edition of its long-running publication, Computer Control and Audit Guide (CCAG) to universities throughout Ontario. A CCAG order form is posted on the UWCISA website.

IT Diploma Program Structure

The table below outlines the courses for the two options.

<table>
<thead>
<tr>
<th>Pre-Requisites</th>
<th>Common Core Courses</th>
<th>Additional Courses for Diploma in Information Systems Assurance</th>
<th>Additional Courses for Diploma in Business Information Technology</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT User Skills (CS101 or equivalent)</td>
<td>ACC 620 Enterprise IT Architecture &amp; Management</td>
<td>ACC 624 IT Security</td>
<td>ACC 625 IT Strategic Planning</td>
</tr>
<tr>
<td>Intro to Business Systems (ACC 241 or equivalent)</td>
<td>ACC 621 System Reliability Principles and Controls</td>
<td>ACC 626 a IT Assurance Services (1/2 course)</td>
<td>ACC 627 a Business Process Enablement (1/2 course)</td>
</tr>
<tr>
<td>System Acquisition, Development, Implementation and Maintenance (ACC 442 or equivalent)</td>
<td>ACC 623 Business Technology Law</td>
<td>ACC 626 b Computer-Assisted Audit Techniques (1/2 course)</td>
<td>ACC 627 b Project Management (1/2 course)</td>
</tr>
</tbody>
</table>

- **Column A** lists the pre-requisite courses that students would be expected to have prior to admission to the IT Diploma programs. Students could apply for conditional admission to enable them to obtain missing pre-requisites at UW.
- **Column B** lists the core requirements that are common to both Diplomas.
- **Column C** lists the additional courses for the Diploma in Information System Assurance.
- **Column D** lists the additional courses for the Diploma in Business Information Technology.
IT Audit Course for National Accounting Institute of Beijing

An IT Audit course is being developed for the National Accounting Institute of Beijing in partnership with PricewaterhouseCoopers and funded by the World Bank. Phases 1 and 2 have been completed. Phase 3 in progress.

NAI Lecture Hall

Hands-on workshop on computer-assisted audit techniques

“Thou shalt not cook the books”

NAI course instructors and participants

Philip Yang of PWC Beijing instructing

Efrim and Chen, President of NAI
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 continue to improve the site in 2005. 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. We invite partners to join us in our mission to improve the quality and reliability of information systems and the processes used to create, implement, operate, maintain and change them.

THOUGHT LEADERSHIP on ISA

UWCISA will continue working to create a national network for research in privacy, security and trust. Areas of focus will be health care, the financial sector and e-business.

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 projects in progress as previously described. In particular, UWCISA will complete research on alternative ways of representing business models and business processes for use by auditors in risk and control assessments. In addition, UWCISA will complete its database of IT controls for SOX.

FUNDING SPECIFIC RESEARCH and EDUCATION PROJECTS

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, Privacy, Security, Information Integrity, Continuous Process Monitoring, IS Quality, and other areas of interest to the ISA community.

For Research Proposal Guidelines, visit www.arts.uwaterloo.ca/ACCT/uwcisa.

Fellowships and Scholarships

UWCISA has arranged for a three-month visit to the University of Waterloo in Spring/Summer 2005 by Professor Ed O’Donnell of Arizona State University. During this time Professor O’Donnell will work on several IT Governance related projects.

UWCISA will make funds available for Visiting Fellows and doctoral students. For details, contact the Director.

Visit www.arts.uwaterloo.ca/ACCT/uwcisa.
DEVELOPING COURSES, CASES and OTHER TEACHING MATERIAL

IT Audit in China

The Centre will complete the joint UWCISA-PricewaterhouseCoopers Project for the National Accounting Institute in Beijing that began in 2003.

XBRL

The Centre plans to develop and offer PD Workshops on XBRL at the following venues:

- CAAA annual conference in Quebec City June 2, 2005.
- University of Alberta in Edmonton Alberta, June 27, 2005

Support for these workshops is being provided by XBRL Canada, the Institute of Chartered Accountants of Alberta and the Canadian Academic Accounting Association.

OPERATING THE LEARNING CENTRE

UWCISA will continue developing of its suite of online courses, focusing on IT Diploma courses as well as short “self-serve” professional development courses for practitioners.

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.

THE LAST WORD

We welcome inquiries, suggestions and comments!

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The University of Waterloo Centre for Information Systems Assurance gratefully acknowledges the generous support of our founding partners and sponsors.

University of Waterloo
School of Accountancy

Canadian Institute of Chartered Accountants (CICA)

Information Systems Audit and Control Association (ISACA)

www.arts.uwaterloo.ca/ACCT/uwcisa