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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

Carla Carnaghan, PhD, CMA, CISA
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Partner, PriceWaterhouseCoopers, Global Risk Management Solutions, Toronto

Erik Peters, FCA
Retired Auditor General of Ontario

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

Robert Parker, MBA, FCA, CISA, CMC
Retired Partner, Enterprise Risk, Deloitte & Touche, Toronto
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.
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 2005, our eighth year of operation.

During the year we held our fourth bi-annual information system assurance symposium (see inside for details.). The event was the biggest since we began operations, with the largest number of paper submissions, a 60% increase in participants and with the greatest variety of presentations since the inception of the symposium. We also held our first case competition in conjunction with the symposium. The research papers from the symposium, together with discussants’ comments will be published in a special issue of the *International Journal of Accounting Information Systems*. All the presentations are available on the Centre’s website. We are already planning our 2007 Symposium, and we invite participants and presenters to join us. The theme will be *Integrating Information Integrity into Business Information Systems*.

During the year, we saw *A Secure IT Infrastructure for E-Commerce* published by the CICA in English in September 2005 and in French in November 2005. We completed a white paper on “20 Questions that Senior Executives Should Ask About Aligning IT Investments with Business Objectives” on behalf of CICA’s ITAC (Information Technology Advisory Committee). We also completed a project on “Business Process Documentation” with funding from the CAAA/Deloitte Research Fund. A paper on ‘IS Practitioners’ Views on Core Concepts of Information Integrity” was published in the *International Journal of Accounting Information Systems*. This work was funded by ISACA. A number of presentations based on these publications were also made at conferences and meetings of professional associations. Our work in progress includes projects addressing IT controls for SOX, online privacy, information integrity and automated fraud detection techniques.

During the year we also furthered our education mission. The case competition was already mentioned in connection with the symposium. In addition, we held a very successful one day workshop on XBRL on behalf of the CAAA at its annual conference in June 2005 with the support of XBRL Canada. We continued working on the third and final phases of our IT Audit Education Project in partnership with PricewaterhouseCoopers on behalf of the National Accounting Institute of China in Beijing. This project is scheduled for completion in the spring of 2006. We also produced a major update of *Computer Control & Audit Guide* to align it with International Auditing and Assurance Standards.

Starting in the new year we will benefit from the support of CaseWare IDEA Inc. which has become a sponsor of our Centre. We continue to welcome new partners to share in our mission. I thank the Centre’s Board Members and founding sponsors for their continued support and welcome new sponsor CaseWare IDEA Inc. I look forward to working closely with all of you in future.

Respectfully,

J.E. Boritz, PhD, FCA•CISA, CA•IT
Director
Operations and Activities 2005

HOSTING THE CENTRE’S ISA PORTAL

UWCISA’s website, www.arts.uwaterloo.ca/ACCT/uwcisa, serves as the Centre’s ISA Portal. 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. As is the custom, these reports are disseminated both electronically and in hardcopy formats. During the year, we added several new pages as summarized below.

Privacy

Efrim Boritz, Won No and R.P. Sundarraj completed a review of online privacy research.

Also, note Darren Charters’ 2004 report Traversing Privacy Minefields which is available through the ISA portal.

Phishing/Identity Theft

Rudy de Haas summarizes 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.

Effective January 1, 2006 CaseWare IDEA Inc. will become a sustaining sponsor of the Centre.

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 2005.

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.


• “Assurance Issues for a Data Centric World” in collaboration with Eric E. Cohen of PricewaterhouseCoopers was presented at the International Continuous Auditing Conference in Malta, May 13-14, 2005.
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 study was published by the CICA in English in September 2005 and in French in November 2005. It was presented at the CICA/IIA/ISACA Conference on IT Audit, Governance and Control April 4, 2005 as well as a number of other meetings of professional and academic associations.

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 published by CICA’s ITAC (Information Technology Advisory Committee) in its whitepaper series. It was also presented at the CICA/IIA/ISACA Conference on IT Audit, Governance and Control April 4, 2005.

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 left):


Please also note the earlier works in the series:


- 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.)
SPONSORING RESEARCH SYMPOSIA, CONFERENCES, WORKSHOPS

XBRL
During the year, the Centre organized a one day PD workshop in conjunction with the CAAA (Canadian Academic Accounting Association) and XBRL Canada who provided the financial support for the workshop. The workshop was held in conjunction with the CAAA’s annual conference on June 2, 2005 and was attended by 17 participants from across Canada and beyond.

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.

Sarbanes-Oxley & IT Controls
Mr. Massood Oroomchi conducted a workshop on Sarbanes-Oxley for University of Waterloo Students.

Ontario’s Auditor General Jim McCarter lectures UW MAcc students on IT controls.

ISA Symposium
The theme for the 2005 symposium was: Integrity, Privacy, Security & Trust in an IT Context.

A case competition was added to encourage the development of ISA cases.

UNIVERSITY OF WATERLOO
Symposium on Information Systems Assurance
Integrity, Privacy, Security & Trust in an IT Context

October 20-22, 2005
Inercontinental Hotel,
220 Bloor Street West, Toronto Canada

Sponsored by
the University of Waterloo
the Canadian Institute of Chartered Accountants
the Information Systems Audit and Control Association
the International Journal of Accounting Information Systems

UW MAcc students listen to Ontario’s Auditor General Jim McCarter.

2005 RESEARCH SYMPOSIUM SCENES
PROGRAM

Thursday, October 20, 2005
7:00 – 10:00 pm Opening Reception

Friday, October 21, 2005
8:00 – 8:30 Breakfast
8:30 – 9:00 Opening
    Alister Mason, Director School of Accountancy, U. of Waterloo and William Swirsky, VP Knowledge Development, CICA and Chair, UWCISA
9:00 – 10:15 Moderator: William Swirsky, CICA
A Secure IT Infrastructure for e-Commerce
    Presenter: Efrim Boritz, U. of Waterloo
    Discussant: Martin Gilbert, GoSecure Inc.
Engineering e-Business Applications for Security
    Presenter: Sharon Hagi, IBM
    Discussant: Gerald Trites, St. Francis Xavier U.
    Discussant: David Chan, MBS, Government of Ontario
Break
10:45 – 12:00 Market Reaction to E-Commerce Impairments Evidenced by Website Outages
    Moderator: Steve Sutton, IJAIS
    Discussant: Vernon Richardson, U. of Arkansas
    Discussant: Nicholas Mensah, Ernst & Young

Lunch
1:00 – 3:00 “XBRL at 6”
    Moderator: Glen Gray, California State U.
    Presenters: William McCarthy, Michigan State U., Daniel Roberts, Grant Thornton, and Mike Willis, PricewaterhouseCoopers
Break
3:30 – 4:30 Modeling an Intelligent Continuous Authentication System To Protect Financial Information Resources
    Moderator: Arturo Lopez, PricewaterhouseCoopers
    Presenters: Thomas Calderon, Akhilesh Chandra, and John Cheh, U. of Akron
    Discussant: R. Sundarraj, U. of Waterloo
    Discussant: James Gaston, Protiviti
4:30 – 5:30 Continuous Monitoring of Business Process Controls: A Pilot Implementation of a Continuous Auditing System at Siemens
    Moderator: Thomas Lamm, ISACA
    Presenters: Michael Alles, Gerard Brennan, Alexander Kogan and Miklos Vasarhelyi, Rutgers Business School
    Discussant: Michael Groomer, Indiana U.
    Discussant: Clyde Rogers, CIBC

7:00 – Banquet
L’Espresso Bar Mercurio
321 Bloor Street West

Mary Curtis, Carla Carnaghan and Cheryl Dunn  Tom Crouch  Mike Groomer and Andreas Nicolaou
Saturday, October 22, 2005

8:00 – 8:30  Breakfast

8:30 – 10:30  Business Process Modeling Approaches For Use in Audit Risk Assessment: An Analysis and Comparison
  Moderator: Thomas Lamm, ISACA
  Presenter: Carla Carnaghan, U. of Waterloo
  Discussant: Cheryl Dunn, Florida State U.
  Discussant: Mario Durigon, KPMG

Demonstration of Sunlife’s Business Process Documentation Approach
  Presenter: Tom Crouch, Sunlife Financial

Break

11:00 – 11:30  Review of Research on Online Privacy
  Moderator: Robert Parker, Deloitte
  Presenter: Won No, U. of Waterloo
  Discussant: Darren Charters, U. of Waterloo

11:30 – 12:00  Comparative Analysis of IT Control Frameworks for SOX
  Moderator: Robert Parker, Deloitte
  Presenter: Malik Datardina, U. of Waterloo
  Discussant: Arturo Lopez, PricewaterhouseCoopers

Lunch

1:00 – 2:15  The Influence of Content and Timing of Reliability Assurance in B2B E-Commerce
  Moderator: Steve Sutton, IJAIS
  Discussant: Robert Parker, Deloitte

2:15 – 4:15  Cases
  Moderator: Carla Carnaghan, U. of Waterloo
  Due Diligence on Fast-Fashion Inventory Through Data Querying
  Presenters: Faye Borthick, Georgia State U. and Mary Curtis, U. of North Texas
  Discussant: David Bateman, St. Mary’s U.
  Discussant: Bob Cuthbertson, CaseWare IDEA Inc.

SportsStuff.com – Reporting Financial Performance in XBRL with Assurance
  Presenters: Roger Debreceny, U. of Hawaii and Skip White, U. of Delaware
  Discussant: Uday Murthy, U. of Southern Florida
  Discussant: Eric Cohen, PricewaterhouseCoopers
DOCUMENTING BEST PRACTICES

A Secure IT Infrastructure for E-Commerce

The purpose of this study is described on page 4 of this report.

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

The study was published in English in September 2005 and French in November 2005. It was presented at the CICA/IIA/ISACA Conference on IT Audit, Governance and Control April 4, 2005 and several other meetings of professional and academic associations.

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 published by CICA’s ITAC (Information Technology Advisory Committee) in its whitepaper series. It was also presented 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.

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.

Funding for this project is provided by the CAAA/Deloitte 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 has completed phase 1 of the project and expects phase 2 to be completed in summer of 2006.
DEVELOPING COURSES, CASES, and OTHER TEACHING MATERIAL

Cases
A case competition was held in conjunction with the Symposium. Financial incentives were provided in the form of prizes totaling $5,000.
Two cases were awarded prizes as noted on page 7.

OPERATING THE LEARNING CENTRE

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

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 2006.
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 2005 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

<table>
<thead>
<tr>
<th>Column</th>
<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>A</td>
<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>B</td>
<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>C</td>
<td>System Acquisition, Development, Implementation and Maintenance (ACC 442 or equivalent)</td>
<td>ACC622 E-Business</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, the final phase, is in progress and due for completion in Spring of 2006.
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 continue to improve the site in 2006. 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 an international 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 fifth bi-annual Research Symposium and Education Conference, slated for Toronto in October 2007. The theme of the Research Symposium will be Integrating Information Integrity into Business Information Systems. 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 will make funds available for Visiting Fellows and doctoral students. For details, contact the Director.

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 in Spring of 2006.

XBRL

The Centre plans to develop and offer PD Workshops on XBRL.

Cases

With the help of the Toronto chapter of ISACA, the Centre plans to hold a case writing workshop to stimulate the development of cases for instructional use.

OPERATING THE LEARNING CENTRE

UWCISA will continue developing 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 continue to work on internationalizing the content of Computer Control and Audit Guide (CCAG).
Centre Personnel

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Won No
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Research Fellow

Rudy de Haas
Researcher

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Sean Speers
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THE LAST WORD

We welcome inquiries, suggestions and comments!

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