ANNUAL REPORT 2012

Centre for Information Integrity and Information Systems Assurance

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WATERLOO ACCOUNTING AND FINANCE
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MISSION STATEMENT

The mission of the University of Waterloo Centre for Information Integrity and Information Systems Assurance (UWCISA) falls under three headings:

**RESEARCH:** Identify, create and deliver research addressing information integrity, IT governance, control and assurance issues;

**EDUCATION AND KNOWLEDGE TRANSFER:** Support and promote the delivery of educational activities and materials related to information integrity, IT governance, control and assurance issues;

**INTERACTION:** Communicate and promote information integrity, IT 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.

The Centre invites and welcomes new sponsors/collaborators to share in its mission.

BACKGROUND

The University of Waterloo is a leading university in Canada and is well known for its information technology related research, teaching and entrepreneurship. The School of Accounting and Finance (SAF) is one of Canada’s leading academic units in the accounting and finance fields and has both a Canada-wide and international reputation. The School is a strong supporter of the information integrity and information systems assurance fields, as demonstrated by its leading courses and programs in these areas and related research they have spawned.

The UWCISA (Centre) was founded in 1998 by the School of Accounting and Finance at the University of Waterloo. The founding sponsors were the Canadian Institute of Chartered Accountants (CICA) and the Information Systems Audit and Control Association (ISACA). CaseWare IDEA Inc. joined the sponsor group on January 1, 2006. The Sponsors’ objectives are to improve the quality of education and research in information integrity and information systems assurance, and to foster a close and continuing working relationship between the School, the sponsors and other partners with an interest in information integrity and information systems assurance. The Centre was renamed from the Centre for Information Systems Assurance to the Centre for Information Integrity and Information Systems Assurance in 2008 (retaining the acronym UWCISA) in recognition of the need to broaden the Centre’s mandate and activities beyond systems assurance to information integrity. UWCISA is an administrative sub-unit within the Centre of Accounting Research and Education (CARE).

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1 The following name changes have taken place since the founding of the UWCISA. ISACA replaced Information Systems Audit and Control Association on January 1, 2006. The School of Accounting and Finance replaced The School of Accountancy on November 19, 2007. Chartered Professional Accountants of Canada (CPA Canada) replaced Canadian Institute of Chartered Accountants (CICA) on April 1, 2013.
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 Integrity and Information Systems Assurance during 2012, our fifteenth year of operation.

This year marks the final year in the five-year funding commitment by the Centre’s sponsors for the period 2008–2012, inclusive. I am pleased that a new plan for the next three-year funding period (2013–2015) and updated terms of reference have been approved by the Board.

During the year, we continued our thought leadership role through service on the CICA’s Information Management and Technology Advisory Committee (IMTAC), the Trust Services/Data Level Assurance Task Force of the AICPA, and both the International Assurance and International Academic Committees of XBRL. We also continued our research activities related to information integrity, IT governance and internal control, online privacy, XBRL and data level assurance and presented our research at a number of conferences as detailed in the report. During the year, we saw a number of publications result from these efforts as detailed in this report. Our work in progress includes projects addressing IT governance, IT controls, online privacy, XBRL, information integrity, business process documentation, business model documentation and data level assurance.

We have begun to work with other centres with similar purposes to create an international network for mutual support of our respective missions. We are also expanding our relationship with the Institute of Internal Auditors (IIA) which has accredited UW’s internal auditing education curriculum under its IAEP program. We have already started planning our October 2013 Symposium on Information Integrity and Information Systems Assurance. 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. I look forward to working closely with all of you in future.

Respectfully,

J.E. Boritz, PhD, FCA, CA•IT/CISA
Director
OPERATIONS AND ACTIVITIES FOR 2012

RESEARCH

THOUGHT LEADERSHIP

The Centre provided thought leadership in several areas during 2012. Copies of working papers are available on the UW CISAs’s website.

PRESENTATION METHODS TO SUPPORT BUSINESS RISK ASSESSMENTS

Objective: 1) to summarize approaches to documenting business models and business processes for risk assessment and control purposes; 2) create illustrative cases based on practice; 3) interview audit team members about their views on alternative presentation approaches.

• Approaches to Documenting Business Models. Research team is Efrim Boritz, Carla Carnaghan, University of Lethbridge, Paulo Alencar, Computer Systems Group, University of Waterloo. Funding for this project was provided by the KPMG/University of Illinois Business Measurement Program. A paper is being revised for publication.

• Business Risk Assessment. Research team is Efrim Boritz and Kun Huo. This paper is an extension of the previous item. The paper has been accepted for presentation at the CAAA annual meeting in Montreal, June 2013.

• The Effects of Business Process Representation Type on the Assessment of Business and Control Risk: Diagrams Versus Narratives. The research team is Efrim Boritz, Faye Borthick, Georgia State University and Adam Presslee, University of Waterloo. Funding for this project was provided by the CAAA/Deloitte Research Fund. This paper was published in the Fall 2012 Issues in Accounting Education. Adam Presslee

• An extension of the above paper with more experienced participants was presented at the Research Roundtable session at the AAA Auditing section midyear meeting in Savannah, GA, January 13–14, 2012; the CAAA Annual Conference in Charlottetown, PEI, May 31–June 3, 2012; the AAA annual meeting in Washington, DC, August 4–8, 2012. Revisions to this paper are currently in progress.

INFORMATION INTEGRITY

Objective: 1) to define information integrity and to identify information integrity risks and controls for mitigating those risks; 2) to define assurance practices for information integrity services; 3) interview or survey audit team members about their views on information integrity risks, controls and assurance practices.

• The Director is a member of the AICPA’s data integrity task force. This Group is developing criteria for assessing and reporting on the integrity of data. A white paper authored by UW CISAs Research Fellow Gerald Trites has been prepared under the auspices of this task force.

• Information Integrity Control Guidelines. Project team is Efrim Boritz and Malik Datardina. Funding is being provided by CICA. Members of the project advisory board are: Chris Anderson, CA (NZ), CISA, CMC, CISSP, Grant Thornton LLP, Toronto, (Ontario); Usuff Curim, FCGA, CISA, CPA, PricewaterhouseCoopers, Toronto, (Ontario); Ray Henrickson, CA•IT/CISA, Scotiabank, Toronto, (Ontario); Darren James ACA, CISA, Deloitte LLP, Toronto, (Ontario); Richard Livesley, BMO, Financial Group, Toronto, (Ontario); Madhavan Nayar, Infogix, Inc.; Naperville, (Illinois, USA); Sheryl A. Teed, FCA, CA•IT/CISA, CFE, Ernst & Young LLP, Toronto, (Ontario). Research is in progress and nearing completion.

• Accounting Students’ Sensitivity to Attributes of Information. Research team is Leslie Berger and Efrim Boritz. Funded by SAP/CAAA grant. Paper was published in the AAA’s journal Issues in Accounting Education Fall 2012. Leslie Berger
IT & INFORMATION GOVERNANCE

Objective: 1) to define information governance and to identify risk and controls for mitigating those risks; 2) to define assurance practices for IT and information governance services; 3) interview or survey audit team members about their views on IT and information governance risks, controls and assurance practices. Research team is Jee-Hae Lim and Efrim Boritz.

• Are there Consequences for Executives who Permit Material Weaknesses in Financial Reporting Systems? Received SSHRC Grant for 2010–2013.

IT RISKS AND INTERNAL CONTROL

Objective: 1) to describe IT risks and controls for mitigating those risks; 2) to define assurance practices for IT control related services; 3) interview or survey audit team members about their views on IT risks, controls and assurance practices. Research team is Efrim Boritz, Jee-Hae Lim and Louise Hayes.

• A Content Analysis of Auditors’ Reports on IT Internal Control Weaknesses. The comparative advantages of an automated approach to IT control weak identification. This paper is forthcoming in the June 2013 issue of International Journal of Accounting Information Systems.

• On IT Control Weaknesses in Auditors’ Reports on Internal Control. Paper presented at the AAA-IS mid-year meeting in Clearwater, FL, January 2010; the European Accounting Association Conference in Istanbul, May 2010; the CAAA Annual Conference in Vancouver, May 2010; and the AAA Conference in San Francisco, July 2010; the CAAA Annual Conference in Charlottetown, PEI, May 31–June 3, 2012; AAA Annual conferences in Washington August 4–8, 2012; AMCIS Annual Conference in Seattle, Aug 9–10, 2012. Accepted for presentation at the AAA IS section mid-year conference in Ft. Lauderdale, Jan 10–12, 2013. Submitted to the American Accounting Association’s journal Accounting Horizons for review and received an invitation to revise and resubmit. This paper is currently being revised for resubmission.

ONLINE PRIVACY

Objective: 1) to describe online privacy risks and controls for mitigating those risks; 2) to define assurance practices for online privacy services; 3) interview or survey various stakeholders and audit team members about their views on online privacy risks, controls and assurance practices.

• Privacy-Enhanced Social Networks by Design. Research team is Arezoo Irannejad, Efrim Boritz and Mark Hancock, University of Waterloo. This project resulted in a Master’s Thesis. Work on converting it into two papers is now in progress. The first paper will focus on Privacy by Design and the second paper will focus on tests of the privacy design guided by Human-Computer Interaction (HCI) theory.

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XBRL/XARL

Objective: 1) to define XBRL-related risks and controls for mitigating those risks; 2) to define assurance practices for XBRL-tagged information; 3) interview or survey various stakeholders and audit team members about their views on XBRL-related risks, controls and assurance practices.

• The Director presented a paper on Characteristics of Participants in the SEC’s Voluntary Filing Program at the 24th World Continuous Auditing and Reporting Symposium “Continuous Auditing and XBRL Coming of Age” in Malatya, Turkey, May 3–4, 2012.
• Computer-Assisted Tools for Auditing XBRL-Related Documents. Research team is Efrim Boritz and Won Gyun No, Iowa State University. This paper is being revised for journal submission.

• Lessons from the SEC’s Voluntary Filing Program. Research team is Efrim Boritz and Lev Timoshenko. This paper was presented at the AAA IS section mid-year meeting, Scottsdale, FL, January 5–7, 2012; the 24th XBRL International Conference in Abu Dhabi, March 20–22, 2012; and is under review at an accounting journal.

• Characteristics of Firms that Participated in the SEC’s Voluntary Filing Program. Research team is Lev Timoshenko and Efrim Boritz. This paper was presented at the AAA IS section mid-year meeting, Scottsdale, FL, January 5–7, 2012; and the 24th World Continuous Auditing and Reporting Symposium “Continuous Auditing and XBRL Coming of Age” in Malatya, Turkey, May 3–4, 2012.

• XBRL vs. the Aggregators. Research team is Efrim Boritz and Won No, Iowa State University. This paper was presented at the 25th XBRL International Conference in Yokohama, Japan, November 6–8, 2012. It was also accepted for presentation at the AAA IS section mid-year conference in Ft. Lauderdale, Jan 10–12, 2013.

• Executive Team Information System and Financial Reporting Competencies and Voluntary Adoption of XBRL Reporting. Research Team is Jee-Hae Lim, Efrim Boritz and Jap Efendi. This paper was presented at the XBRL 25 International Conference in Yokohama, Japan Nov 6–8, 2012. It was also accepted for presentation at the AAA IS section mid-year conference in Ft. Lauderdale, Jan 10–12, 2013.

• The Director was invited to participate on the panel “Using XBRL Data in the Financial Audit” at the 5th University of Kansas International Conference on XBRL, April 25–28, 2013.

• TRUST SERVICES

Objective: 1) to define information integrity and to identify risks and controls for mitigating those risks; 2) to define assurance practices for information integrity services; 3) interview or survey various stakeholders and audit team members about their views on information integrity risks, controls and assurance practices.

• The Director is serving on the AICPA task force to update Trust Services principles and criteria. The task force produced a Guide on Reporting on Controls at a Service Organization in March 2012.

• Whatever Happened to WebTrust and SysTrust? Research team is Efrim Boritz and Louise Hayes. The purpose of this project is to produce a paper summarizing the current status of these assurance services. A review of literature and a structured interview guide have been prepared to use in gathering data for the paper. To be completed in 2013.

• DATA LEVEL ASSURANCE

Objective: 1) to define data level assurance; 2) to define assurance practices for data level assurance services. This topic area is closely related to information integrity and XBRL. Work on this topic is in progress.

• CONTINUOUS REPORTING, MONITORING AND ASSURANCE

Objective: 1) to identify risks associated with continuous reporting, monitoring and assurance, and controls for mitigating those risks; 2) to define assurance practices for continuous reporting and assurance services; 3) interview or survey various stakeholders and audit team members about their views on continuous reporting and monitoring risks, controls and assurance practices.

• Continuous Monitoring and Assurance. Research team is Malik Datardina and Efrim Boritz. A report was produced with funding from CaseWare IDEA Inc. This report will be updated in 2013.
**FUNDING SPECIFIC RESEARCH AND EDUCATION PROJECTS**

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.

**SPONSORING RESEARCH SYMPOSIUM**

**INFORMATION INTEGRITY AND INFORMATION SYSTEMS ASSURANCE SYMPOSIUM**

The 7th Biennial Research Symposium was held October 20–22, 2011 at the Renaissance Hotel, Blue Jays Way, Toronto, Canada. The symposium was sponsored by the University of Waterloo, the Canadian Institute of Chartered Accountants, CaseWare IDEA Inc., ISACA Toronto Chapter, and the *International Journal of Accounting Information Systems*.

A special issue of the *International Journal of Accounting Information Systems* was published in 2012, containing selected papers from UWCISA’s 2011 Symposium.

**EDUCATION AND KNOWLEDGE TRANSFER**

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

**COMPUTER-ASSISTED AUDITING TECHNIQUES**

A team led by Malik Datardina and Scott Shannon, a partner in Grant Thornton’s Hamilton, Ontario office, conducted a workshop on CaseWare’s IDEA software for University of Waterloo students.

**COMPUTER CONTROL AND AUDIT GUIDE**

UWCISA is considering professional development courses in aspects of advanced technologies for assurance professionals.

In 2012 the Centre sold 200 copies of the 15th edition of its long-running publication, *Computer Control and Audit Guide (CCAG)* which is revised every other year to keep it current.

**SHARING MATERIAL WITH OTHER EDUCATORS**

The UWCISA website contains a variety of materials from various Centre-supported initiatives including research papers, reports, videos, and podcasts. These materials are available for use by academics and practitioners.
INTERACTION

ALLIANCES AND RELATIONSHIPS

As part of its mission to interact with academe and practice, the Centre seeks to create and sustain relationships with academic units with similar objectives and professional associations with an interest in information integrity and information systems assurance. During the year, the Centre supported the following activities:

- Clark Hampton led a Centre initiative to assist the School of Accounting and Finance to become an accredited program under the IIA’s IAEP (Internal Auditing Education Program). Approval was received on July 13, 2012. As a representative of the Institute of Internal Auditors (IIA), Jodie Lobana began attending UWCISA Board Meetings in order to continue to develop and deepen the relationship between the Centre and IIA.

- The Director continued to participate on the CICA’s Information Management and Technology Advisory Committee (IMTAC). Information is available at: http://www.cica.ca/focus-on-practice-areas/information-technology/about-imtac/item72179.aspx. In addition, Malik Dataridina, a Research Fellow of the Centre, provides support for IMTAC.

- The Director served on both the Assurance and Academic Committees of XBRL International.

- The Director was appointed to serve as a member of the Departmental Audit Committee of Shared Services Canada. (SSC). The creation of SSC on August 4, 2011, brought together people, technology resources and assets from 43 federal departments and agencies to improve the efficiency, reliability and security of the Government’s IT infrastructure. A more efficient use of technology will increase productivity across departments and will help build a more modern public service. SSC’s total budget for 2012–13 is approximately $1.7 billion (including revenue from cost-recovery services).

- We continued to work with academic units with similar purposes to create an international network for mutual support of our respective missions.

DISSEMINATING BEST PRACTICES

CONFERENCES

- Centre personnel made presentations at a number of conferences during 2012, including the American Accounting Association (AAA)-IS section mid-year meeting, the AAA annual conference, the Canadian Academic Accounting Association (CAAA) Annual Conference, XBRL International Conferences in Abu Dhabi and Yokohama, Japan, the University of Malatya, Turkey Continuous Auditing Conference, Konkuk University in Seoul Korea, the American Conference on Computer Information Systems and the International Conference on Information Systems (ICIS).

COURSES AND WORKSHOPS

- Due to delays in the SEC’s approval of the XBRL IFRS taxonomy, the plans to offer a PD Workshop on XBRL for preparers and assurance providers were postponed.

COMMUNICATION

WEBSITE AND SOCIAL MEDIA OUTREACH

UWCISA’s website, accounting.uwaterloo.ca/uwcisa, serves as the Centre’s ISA Portal. It includes calls for papers and research proposals, a resources section, a number of links and downloadable, and the IS Assurance blog.

UWCISA’s Annual Reports are posted to the website and summarize the Centre’s year-by-year activities. These reports are disseminated both electronically and in hardcopy formats.

Robert Parker’s thought leading environmental scans are posted on the Centre’s website and are available at accounting.uwaterloo.ca/uwcisa/resources/videos.htm.

Our website, through Theophanis Stratopoulos’ initiative, is linked to key social networks such as Facebook, LinkedIn and Twitter. These social networks give us an opportunity to share information (like the flyer for the Symposium) with people who would not normally be closely tied to our Centre. During the coming year we will explore the use of other ways to extend our reach.

IS ASSURANCE WEBLOG

Malik Dataridina ably took over the maintenance of our blog from Gerald Trites (at uwcisa-assurance.blogspot.com).

For the second year, articles in ISACA’s Toronto Chapter Newsletter have been used to communicate UWCISA’s activities to Chapter members.
FUTURE PLANS

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

RESEARCH

THOUGHT LEADERSHIP

UWCISA will continue working on the following projects during 2013:

• Business Process Documentation. One paper on this topic will be completed and submitted for presentation at various conferences.

• Business Model Documentation. One paper on this topic will be completed and submitted for presentation at various conferences.

• Data Level Assurance. One paper on this topic will be completed.

• Information Integrity. One monograph on this topic is being prepared for publication, and a new project will be started.

• IT and Information Governance. One paper on this topic will be completed.

• IT Risks and Internal Control. One paper on this topic will be completed.

• Online Privacy. Two papers on this topic are being prepared for presentation and publication.

• Trust Services. One paper on this topic will be completed.

• XBRL. Four papers on this topic will be presented at various conferences and prepared for publication.

FUNDING SPECIFIC RESEARCH AND EDUCATION PROJECTS

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 integrity of information and the quality and reliability of information systems and the processes used to create, implement, operate, maintain and change them.

RESEARCH PROPOSALS

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

FELLOWSHIPS AND SCHOLARSHIPS

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

SPONSORING RESEARCH SYMPOSIUM

The 8th Biennial Research Symposium will be held October 3–5, 2013 at the Renaissance Hotel, Blue Jays Way, Toronto, Canada. The symposium is sponsored by the University of Waterloo, the Canadian Institute of Chartered Professional Accountants, CaseWare IDEA Inc., ISACA Toronto Chapter, and the International Journal of Accounting Information Systems.

A special issue of the International Journal of Accounting Information Systems will be published in 2014, containing selected papers from UWCISA’s 2013 Symposium.
EDUCATION AND KNOWLEDGE TRANSFER

DEVELOPING COURSES, CASES AND OTHER TEACHING MATERIAL

COMPUTER-ASSISTED AUDITING TECHNIQUES, DATA ANALYTICS AND BIG DATA

Malik Datardina and Efrim Boritz plan to update their paper on CAATs in the Classroom which is available on the Centre’s website. The update will extend the coverage of this paper to data analytics and Big Data issues.

IT IN ACCOUNTING EDUCATION

Efrim Boritz and Greg Stoner of Glasgow University, Scotland have been invited to write a chapter on IT in Accounting Education for a book titled The Routledge Companion to Accounting Education edited by Richard M. C. Wilson to be published by Routledge Press in 2013. A paper based on that chapter has been accepted for presentation at the AAA annual conference in Anaheim in August 2013.

CASES

UW CISA plans to host a Case Development workshop for faculty teaching IS Assurance courses with the assistance of ISACA’s Toronto Chapter. The Centre plans to develop the following cases during 2013.

• Business Process Documentation
• Business Model Documentation

COMPUTER CONTROL AND AUDIT GUIDE

This publication will be updated in the fourth quarter of 2013.

SHARING MATERIAL WITH OTHER EDUCATORS

The Centre will continue to share its material with educators around the world. For information, please visit our website or contact the Director.

INTERACTION

ALLIANCES AND RELATIONSHIPS

As part of its mission to interact with academia and practice, the Centre seeks to create and sustain relationships with academic units with similar objectives, professional associations and industry partners with an interest in information integrity and information systems assurance. In the coming year we will continue our outreach to units with similar goals and objectives to develop an international network for mutual support.

DISSEMINATING BEST PRACTICES

CONFERENCES

• Centre personnel will make presentations at a number of conferences during 2013, including the American Accounting Association (AAA)-IS section mid-year meeting, the AAA annual conference, the Canadian Academic Accounting Association (CAAA) Annual Conference, XBRL International Conference, the University of Kansas XBRL Conference, Pacific Asia Conference on Information Systems (PACIS), the International Conference on Information Systems (ICIS).

COURSES AND WORKSHOPS

• The Centre plans to offer a PD Workshop on Information Integrity Assurance and Information Integrity Controls during 2013.

• The Centre plans to offer a PD Workshop on XBRL for preparers and assurance providers during 2013 (to be led by Eric Cohen of PWC and Won No of Iowa State University).

COMMUNICATION

WEBSITE AND SOCIAL MEDIA OUTREACH

• Robert Parker will provide an environmental scan for 2013 that will be posted on the UW CISA website in summer of 2013.

• Various social media networks will continue to be used (Facebook, Twitter, YouTube and LinkedIn).

• UW CISA plans to continue to improve the site in 2013. Your comments are welcome.

IS ASSURANCE WEBLOG

• Malik Datardina will continue to manage the IS Assurance blog on behalf of the UW CISA.
The University of Waterloo Centre for Information Integrity and Information Systems Assurance gratefully acknowledges the generous support of our founding partners and sponsors.