



ANNUAL REPORT 2024

CENTRE FOR INFORMATION INTEGRITY AND
INFORMATION SYSTEMS ASSURANCE

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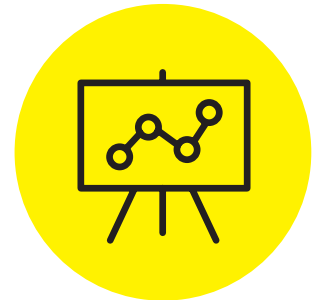


Mission

The mission of the University of Waterloo Centre for Information Integrity and Information Systems Assurance (UWCISA) is to identify, address and communicate issues related to the impact of current and emerging technologies on both information integrity and information system assurance. Focusing on these issues, UWCISA promotes and supports:

RESEARCH

Creation and distribution of investigative projects that provide professional, social, economic, and behavioural results and insights.

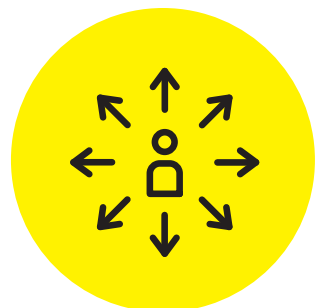


EDUCATION AND KNOWLEDGE TRANSFER

Marketing and delivery of innovative informing activities.

INTERACTION

Dialogue among practitioners, educators, students, and other interested parties.



Overview

UWCISA was founded in 1998 by the School of Accounting and Finance and is an administrative sub-unit within the Centre of Accounting Research and Education (CARE), at the University of Waterloo.

The University of Waterloo (UW) 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 SAF is a strong supporter of the information integrity and information systems assurance fields, as shown by its leading courses and programs in these areas and related research they have spawned.

The founding sponsors of UWCISA were the Chartered Professional Accountants of Canada (CPA Canada) and ISACA1. IIA Canada became a sponsor on July 1, 2018.

CPA Canada ceased broad sponsorship on December 31, 2024 but continues to offer sponsorship to UWCISA initiatives on a project-by-project basis. The sponsors' objectives continue to include:

- › improving the quality of education and research in information integrity and information systems assurance; and
- › fostering a close and continuing working relationship between the SAF, the sponsors, and other partners with an interest in information integrity and information systems assurance.

ORGANIZATION

UWCISA was reorganized in 2022. It consists of six focus areas headed by Associate Directors reporting to the Executive Director. Each area engages in research, education, and interaction activities as described in the mission statement of UWCISA.

- › **Assurance Services** – Tim Bauer
- › **Cybersecurity and AIS** – Alec Cram
- › **Data Analytics** – Theo Stratopoulos
- › **Emerging Technologies** – Theo Stratopoulos
- › **Internal Audit** – Adam Vitalis
- › **Environmental, Social and Governance Assurance (ESG)** – Adam Vitalis

Note from the Director

To the Board of Directors:

After another challenging year, we are pleased to present this report on the operations and activities of the UWCISA during 2024, our twenty-seventh year of operation.

On a sad note, our former chair, Bill Swirsky, passed away in May of 2024. This was a terrible shock to all of us. We have created a scholarship in his name to honour his memory and his contribution to accounting innovation.

This year marks the third year in a renewed three-year plan approved by UWCISA's sponsors for the period 2022–2024, inclusive. As reported last year, we reorganized the Centre into focus areas headed by four Associate Directors. The focus areas and their leaders are Assurance Services (Tim Bauer); Cybersecurity & AIS (Alec Cram); Data Analytics, and Emerging Technologies (Theo Stratopoulos); and Internal Audit, and ESG Assurance (Adam Vitalis). Next year will mark a transition of leadership of UWCISA as Efrim Boritz retires and Tim Bauer takes on the role of Executive Director of UWCISA.

During the year, we fulfilled our thought leadership role through members' service on various boards and advisory groups including the Auditing and Assurance Standards Board's (AASB) Audit Evidence Advisory Group, the American Institute of Certified Public Accountants' (AICPA) Trust Services Information Integrity and Cybersecurity Assurance Task Forces, CPA Canada's Audit Data Analytics and Audit and Assurance Technology Committees, and the CPA Canada/AICPA AI Project Advisory Group. Members of the Centre also serve as editors and/or on editorial boards of several academic journals, including Accounting Forum, Accounting, Organizations and Society, Accounting Perspectives, Auditing: A Journal of Practice and Theory, Contemporary Accounting Research, Information Systems Journal, International Journal of Accounting Information Systems, Journal of Emerging Technologies in Accounting, and Journal of Information Systems.

We continued work on major projects on assurance innovation and internal audit competencies, continued our research activities on several other projects which have

resulted in publications in high quality journals, and presented our research at academic and practitioner conferences, all detailed in this report. Our work in progress includes a variety of interesting projects addressing key topics in the broad fields of assurance, information systems, information integrity, and more.

Selected papers from the 13th Biennial Research Symposium on Information Integrity and Information Systems Assurance held in the Fall of 2023 were published in a special issue of the IJAIS during 2024. We have also started planning for our 14th Biennial Research Symposium, to be held in the Fall of 2025.

This year we offered very successful in-person and virtual Continuing Professional Development (CPD) sessions on GenAI. We also formally launched our new initiative – Coffee Break PD™ – which offers inexpensive “gulp-sized” PD opportunities on topics of interest to practitioners.

We continue to work with other Centres with similar purposes such as the one at Rutgers University, strengthening an international network for mutual support of our respective missions. We are members of the University of Waterloo's Cybersecurity and Privacy Institute and Waterloo.AI.

We welcome new partners to share in our mission. We thank UWCISA's Board members and sponsors for their continued support and look forward to another productive year.



DR. J.E. BORITZ, FCPA, FCA, CISA
EXECUTIVE DIRECTOR



DR. T. BAUER, CPA
EXECUTIVE DIRECTOR ELECT

RECOGNITION OF UWCISA MEMBERS

Awards

UWCISA personnel were recognized for their contributions to research, education, and/or the accounting profession during 2024.



ALEC CRAM

Association for Information Systems (AIS) Senior Scholar

Best Publication of 2023 Award

- › Won by Alec Cram, and his co-author Jeff Proudfoot at Bentley University, for their 2023-published paper [The Importance of Board Member Actions for Cybersecurity Governance and Risk Management](#)
- › The AIS Senior Scholar Best Publication Award annually recognizes up to five papers published across a range of IS journals, as selected by journal editors and a panel of senior scholars, to bring outstanding papers to the attention of the IS community.
- › This year's award was conferred to Alec in December 2024 at the International Conference on Information Systems.
- › The paper draws on in-depth interviews with board members and executives to describe four core cybersecurity challenges that boards encounter and provide 10 recommended actions they can take in response. These actions enable boards to optimize their ability to provide meaningful, effective governance to address cybersecurity risk.



FRANK YAM

2024 Hong Kong Institute of Directors (HKIoD)

Directors of the Year Award

- › Won by the Board of the IIA Hong Kong, of which Frank Yam is a Director, in the Non-Profit Distributing Organisations category.
- › Frank and the Board of the IIA Hong Kong were also recognized with an award for *Excellence in Board Diversity*.
- › The HKIoD Directors of the Year Awards annually recognize outstanding boards and directors who demonstrate good practices in corporate governance and director professionalism.
- › Frank accepted the award in November 2024 at the HKIoD Annual Dinner.

2024 Asian Confederation of Institutes of Internal Auditors

(ACIIA) Outstanding Contribution in the World of Internal Audit

- › Won by Frank Yam, for his extraordinary contributions to the profession as a Board member of the IIA Hong Kong and so much more.
- › The ACIIA Outstanding Contribution in the Field of Internal Audit Award annually recognizes an internal audit leader who has made an exceptional impact in the internal audit profession through research, education, publications, conferences, practice, speaking, innovative programs, or other developmental activities.
- › It is the highest honour bestowed by the ACIIA.
- › Frank accepted the award in August 2024 at the ACIIA Regional Conference.

RECOGNITION OF UWCISA MEMBERS

Grants

UWCISA personnel held research grants and support in 2024, awarded for their ongoing research.



TIM BAUER

Social Sciences and Humanities Research

Council-Insight Grant

Awarded to Tim Bauer (Principal Investigator) for the research proposal *Troublesome Clients: What do Auditors Experience and How Do They Deal With It*.

Total grant - \$94,676 for the years 2023-2026.

Social Sciences and Humanities Research

Council-Insight Development Grant

Awarded to Tim Bauer (Co-Investigator), Samantha Seto at Simon Fraser University (Principal Investigator) and Jenny Ulla at University of Illinois Urbana-Champaign (Collaborator) for the research proposal *Managing the Remote Audit - The Effect of Management Style and Algorithmic vs. Human Managers on Auditor Behaviors and Outcomes*.

Total grant - \$71,780 for the years 2023-2025.

THEO STRATOPOULOS

Social Sciences and Humanities Research

Council-Insight Grant

Awarded to Theo Stratopoulos (Co-Investigator), Changling (Principal Investigator) for the research proposal *Corporate Disclosures under Extreme Uncertainty: Evidence from COVID-19 Pandemic*.

Total grant - \$97,000 for the years 2021-2024





SEPIDEH EBRAHIMI

Social Sciences and Humanities Research

Council-Insight Grant

Awarded to Sepideh Ebrahimi (Principal Investigator) and Christian Matt at University of Bern (Collaborator) for the research proposal *Understanding how Task Complexity and Employees' Expertise Impact Adopting Discriminatory Data Analytics Recommendations and Developing Potential Countermeasures*.

Total grant - \$98,416 for the years 2021-2028



SASAN SAIY

Social Sciences and Humanities Research

Council-Insight Development Grant

Awarded to Sasan Saiy (Co-Investigator) and Amr ElAlfy (Principal Investigator) for the research proposal *Sustainability Disclosure and Net Zero Targets: Investigating the Readiness of Canadian Firms and Implications for Financial Stability*.

Total grant - \$66,337 for the years 2024-2026

Social Sciences and Humanities Research

Council-Partnership Engage Grant

Awarded to Sasan Saiy (Co-Investigator) and Amr ElAlfy (Principal Investigator) for the research proposal *The Sustainable Aeronautics and the Readiness for New International Sustainability Standards Board (ISSB) Mandates: Assessing the Impact of Net Zero Targets and Sustainability Reporting on Financial Performance*.

Total grant - \$25,000 for the years 2024-2026

Smart Prosperity Institute Research Funding

Awarded to Sasan Saiy (Co-Investigator) and Amr ElAlfy (Principal Investigator) for the research proposal *The Path to a Low-carbon Economy: A Detailed Study of Canada in a Global Context*.

Total grant - \$22,610 for the years 2024-2026



KRISTA FIOLEAU

Social Sciences and Humanities Research

Council-Insight Grant

Awarded to Krista Fiolleau (Co-Investigator), Joanna Andrejkow at Western University (Principal Investigator), Tisha King (Co-Investigator), and Jeremy Douthit at the University of Arizona (Co-Applicant) for the research proposal *The Effect of Formal and Informal Control Systems on Employees' Honesty*.

Total grant - \$93,526 for the years 2024-2027



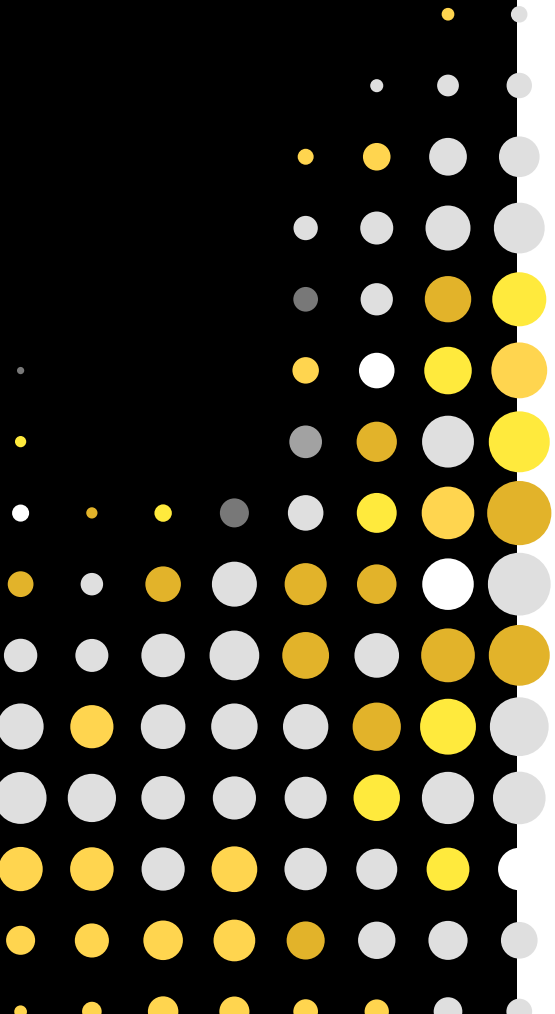
RECOGNITION OF UWCISA MEMBERS

Fellowships and scholarships

UWCISA makes funds available for Visiting Fellows and doctoral students. Interested applicants should [contact the Executive Director](#).

UWCISA and its members have also established three scholarships that are awarded annually to students enrolled in the Master of Accounting (MAcc) or PhD programs at SAF, as detailed below:

Borys and Rose Boritz Accounting Graduate Scholarship

- › Awarded to an MAcc student based on an excellent academic record at the undergraduate level.
 - › Preference given to students with a minor in International Studies.
 - › Borys and Rose Boritz were immigrants who escaped persecution and settled in Canada. Although their own opportunities for higher education were curtailed by World War II and its aftermath, they inculcated the importance of education, cultural sensitivity, and international awareness in their children. This endowment is a lasting tribute to their memory.
 - › The scholarship was graciously established by Efrim Boritz.
- 



Bill Swirsky Graduate Accounting Innovation Scholarship

- › Awarded to an MAcc student based on an excellent academic record at the undergraduate level and demonstrated interest in emerging technologies or other innovations that exemplify Bill Swirsky's commitment to accounting innovation.
- › Bill Swirsky was a tireless promoter of innovation in the accounting profession, helped establish UWCISA, and was Chair of its Board from inception in 1998 until 2023.
- › The scholarship was graciously established by Bill's family, colleagues, friends, and admirers.
- › More details on Bill's legacy, this scholarship, and how you can support it follow in this report.

Efrim Boritz Doctoral Scholarship in Emerging Technologies

- › Awarded to a PhD student in SAF based on academic excellence and demonstrated interest in emerging technologies or accounting information systems (AIS) that exemplify Efrim Boritz's passions and contributions to the fields of accounting and assurance.
- › Efrim Boritz is a champion of AIS, information integrity, and assurance in the accounting profession, helped establish UWCISA, and has served as its Executive Director from inception in 1998 through 2024.
- › The scholarship was graciously established by Doug Johnson, Efrim Boritz, and their friends and colleagues.



REMEMBERING BILL SWIRSKY

BILL SWIRSKY'S LEGACY

Bill Swirsky was a tireless promoter of innovation in the accounting profession. He supported numerous initiatives and mentored many individuals with the aim of improving accounting practice through new ideas, technologies and processes. He helped to establish UWCISA and was the Chair of its Board of Directors from its inception in 1998 to 2023.

BILL SWIRSKY GRADUATE ACCOUNTING INNOVATION SCHOLARSHIP

This Scholarship was established by Bill Swirsky's family, colleagues, friends, and admirers in honour of his many contributions to the University, the School of Accounting and Finance (SAF), and accounting innovation.

It is awarded to Master of Accounting (MAcc) students who, through their academic endeavours or extracurricular activities, have demonstrated an interest in emerging technologies or other innovations that exemplify Bill Swirsky's commitment to accounting innovation.

CONTRIBUTIONS TO THE ENDOWMENT

Contributions are tax deductible. To make a contribution to this scholarship you can use the following link:
[uWaterloo Alumni and Donor Community - Make a Gift to Waterloo – Gift Information](#)

At the url above, in the "Gift Designation" area please select "Other fund" and enter "Bill Swirsky in Memoriam" in the space provided. Or, contact:

ELIGIBILITY AND SELECTION

- › Applicants must be registered full-time in SAF in the Faculty of Arts MAcc program
- › Selection is to be based on academic excellence (minimum 80% cumulative average in their current program) and demonstrated interest in emerging technologies or other innovations that exemplify Bill Swirsky's commitment to accounting innovation
- › Students interested in being considered must submit a written statement, no more than two pages long, outlining how they meet the eligibility criteria to the graduate office in SAF by the deadline advertised by the School
- › SAF will select recipients; should an eligible recipient not be identified, the award will be held over to the following year

Sheilaah Guthrie

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200 University Ave. W, Waterloo, ON N2L 3G1

Phone: 519-888-4567, ext. 48917

Email: sheilaah.guthrie@uwaterloo.ca

RESEARCH



TIM BAUER



EFRIM BORITZ



KRISTA FIOLLEAU



BRAD POMEROY



ADAM VITALIS



PEI WANG

THOUGHT LEADERSHIP

Through its research activities, UWCISA provided thought leadership in several areas during 2024.

FOCUS AREA: ASSURANCE

Assurance Solutions and Services: Current and Future Opportunities

Research team: Tim Bauer, Efrim Boritz, Krista Fiolleau, Brad Pomeroy, Adam Vitalis and Pei Wang.

Summary: This project examines the marketplace of assurance services and solutions currently being offered by CPA firms and non-CPAs. Doing so informs the CPA profession and scholars about opportunities, barriers, competition, and trends for CPA firms in the ever-evolving areas of assurance services and tools and technologies used in or assessed within those services. Across two phases of the project, the research team collected data that has contributed to two papers and one preliminary summary of findings. Each individual report is discussed separately.

Data collection began in Phase 1 with an initial review of practitioner-oriented sources and academic literature to compile a database of the evolution of assurance-related services, and tools and technologies used in such services, to date. Subsequently, the research team conducted 20 interviews with practitioners addressing issues related to the development of new assurance services. In Phase 2 data collection continued with an additional eight interviews. Next, the research team conducted a survey with mainly CPA firm representatives about technologies and tools used in assurance services (with assistance from CPA Canada). Finally, the research team held roundtable discussions with assurance leaders in Canada (with assistance from CPA Canada) and the US (with assistance from the AICPA) about priorities and competition for emerging assurance service areas.

This project has received support from UWCISA.

Cataloguing the Marketplace of Assurance Services

Research team: Tim Bauer, Efrim Boritz, Krista Fiolleau, Brad Pomeroy, Adam Vitalis and Pei Wang.

Summary: As part of the Assurance Solutions and Services Project, this paper examines the marketplace of assurance services currently being offered by CPA firms and non-CPAs. The paper catalogues many different assurance service areas and uses a theory-based framework to identify areas where a hypothetical CPA firm is likely to expand its service offerings. Those expectations are compared against observations of real-world CPA firm presence and expert roundtable participants' beliefs about areas CPA firms are well-positioned to expand into. Findings indicate real-world CPA firms are present in many areas not expected to be likely for expansion, and roundtable participants believe there are few areas CPA firms are not well-positioned to expand their service offerings to, suggesting barriers to the expansion of assurance services identified in research may not be barriers in practice.

[This paper](#) received support from UWCISA and was published in *Auditing: A Journal of Practice & Theory* (AJPT), Vol. 43, No. 3, 2024.



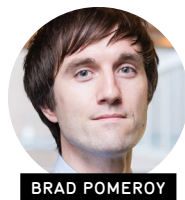
TIM BAUER



EFRIM BORITZ



KRISTA FIOLEAU



BRAD POMEROY



ADAM VITALIS



PEI WANG

Developing New Assurance Services

Research team: Tim Bauer, Efrim Boritz, Krista Fiolleau, Brad Pomeroy and Adam Vitalis.

Summary: As part of the Assurance Solutions and Services Project, this paper interviews CPA and other professionals to investigate how new assurance services are developed, informing research and practice about the key factors and the process through which new assurance service offerings emerge.

Data analysis is ongoing. This report is in process and should be available in Spring 2025. This paper has received support from UWCISA.

Business Models and Business Model Descriptions: A Research Synthesis

Research team: Efrim Boritz and Louise Hayes, University of Guelph.

Summary: This paper addresses a series of research questions that explore the nature of business models and business model descriptions to better understand how they are and can be used in accounting and auditing.

This paper is being revised for resubmission to an academic journal. This paper has received support from UWCISA.



LOUISE HAYES



KATE PATTERSON



KRISTIAN ROTARU



CARLA WILKIN

Neuro-Cognitive Measures of Professional Skepticism

Research team: Efrim Boritz, Kristian Rotaru, Monash University, Kate Patterson, Vienna University of Economics and Business and Carla Wilkin, Monash University.

Summary: This paper examines the moderating role of neurocognitive measures such as risk-taking propensity, cognitive (inhibitory) control and social cognition during the decision-making process to reveal the impact of these neurocognitive traits on professional skepticism during individual decision-making processes associated with audit risk judgments.

This paper is being revised for submission to an academic journal. This paper has received support from UWCISA.

Improving Specialists' Contributions to Audits

Research team: Tim Bauer, Cassandra Estep, Emory University and Emily Griffith, University of Wisconsin-Madison.

Summary: This paper examines how to motivate specialists to deliver high quality work to auditors, in light of prior findings that specialists and auditors do not always work together effectively. Survey findings indicate valuation specialists feel a range of psychological ownership over their audit work, from low to high. Experimental findings indicate valuation specialists identify more contradictions in audit evidence and make higher quality judgments when they have higher psychological ownership, but only when auditor behavior does not infringe on their work.

[This paper](#) is being revised for submission to an academic journal. This paper is co-led by Tim Bauer, an associate director of UWCISA.



TIM BAUER



CASSANDRA ESTEP



EMILY GRIFFITH

How Are Goodwill Impairments Audited? A Study of Auditors and Valuation Specialists

Research team: Efrim Boritz and Lev Timoshenko, University of Calgary.

Summary: This paper examines how auditors and valuation specialists perform the audit of goodwill/cash generating unit impairment under IFRS, focusing on both interpretation and application of fair value accounting and auditing standards by the two groups.

The paper is being revised for resubmission to Accounting Organizations and Society (AOS). This paper has received support from UWCISA.



EFRIM BORITZ



LEV TIMOSHENKO

The Influence of Client Incivility and Coping Strategies on Audit Professionals' Judgments

Research team: Tim Bauer, Sean Hillison, Virginia Tech and Ala Mokhtar, McMaster University.

Summary: This paper examines whether client incivility negatively influences auditors' judgments and whether any adverse effects are mitigated using coping strategies. Survey findings indicate auditors experience client incivility at rates too frequent to ignore and they commonly cope in both passive and active ways. Experimental findings indicate auditors who experience client incivility are less likely to challenge aggressive client reporting, while prompting auditors to cope actively (but not passively) mitigates adverse effects of client incivility for some (but not all) judgments.

In 2024, [this paper](#) was presented at research workshops at the University of Michigan-Dearborn and North Carolina State University. It has been conditionally accepted for publication at Contemporary Accounting Research.

This paper is co-led by Tim Bauer, an associate director of UWCISA.



SEAN HILLISON



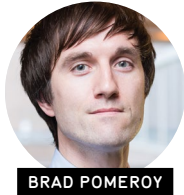
ALA MOKHTAR

Reevaluating the Effects of Auditor Uncertainty Disclosures on Investor Valuation Judgments: A Replication of Dennis, Griffin, and Zehms (2019)

Research team: Brad Pomeroy, Adam Vitalis, and Donnie Young, Indiana University.

Summary: This paper conducts four replication studies and a meta-analysis to investigate whether variation in the need for cognitive closure (NFCC) can explain Dennis, Griffin, and Zehms' (2019, 215) surprising null result that suggests non-professional investors "struggle to weight fully narrative auditor disclosures in their valuation judgments without corresponding management disclosures." The paper's results show that investors do indeed weight fully narrative auditor disclosures even in the absence of related management disclosures, and this conclusion does not appear to be sensitive to investors' NFCC.

This paper has received an Insight Grant from the Social Sciences & Human Research Council of Canada. In 2024, this paper was presented at the 28th Annual International Symposium on Audit Research and at research workshops at HEC Montréal and Wilfrid Laurier University. This paper is co-led by Adam Vitalis, an associate director of UWCISA.



BRAD POMEROY



ADAM VITALIS



DONNIE YOUNG

FOCUS AREA: CYBERSECURITY AND AIS

Time Will Tell: A Case for an Idiographic Approach for Behavioral Cybersecurity Research

Research team: Alec Cram, John D'Arcy, University of Delaware and Alex Benlian, Technische Universität Darmstadt.

Summary: [This paper](#) articulates why an idiographic approach, which undertakes within-person analysis of longitudinal data, can: (1) help validate widely used theories in behavioral cybersecurity research that imply patterns of behavior within a given person over time and (2) provide distinct theoretical insights on behavioral cybersecurity phenomena by accounting for such within-person patterns. Towards these ends, we apply an idiographic approach to an established theory in behavioral cybersecurity research – neutralization theory – and empirically test a within-person variant of this theory using a four-week experience sampling study. Our results support a more granular application of neutralization theory in the cybersecurity context that considers the behavior of a given person over time. We conclude the paper by highlighting the contexts and theories that provide the most promising opportunities for future behavioral cybersecurity research using an idiographic approach.

This paper was published in MIS Quarterly, Vol. 48, No. 1, 2024. This paper is led by Alec Cram, an associate director of UWCISA.

Anti-Phishing Countermeasures

Research lead: Efrim Boritz, executive director of UWCISA.

Summary: The objective is to explore countermeasures to phishing. Meetings have been held with MITACS and Richter LLP to discuss funding possibilities.



EFRIM BORITZ



WON NO

Cybersecurity Risk Disclosures

Research team: Efrim Boritz, executive director of UWCISA and Won No, Rutgers University.

Summary: The paper documents trends in Cybersecurity disclosures in response to SEC requirements.

Weathering the Storm: Charting a Course for Organizations to Navigate the Raging Tempest of Cybersecurity Regulations

Research team: Jeffery Proudfoot, Bentley University, Alec Cram, and Stuart Madnick, MIT Sloan School of Management.

Summary: [The paper](#) aims to clarify how cybersecurity regulations are operationalized in organizations, as well as reveal the compliance and performance consequences of cybersecurity regulations.

This paper has been accepted for publication at the European Journal of Information Systems. This paper is co-led by Alec Cram, an associate director of UWCISA.



ALEX BENLIAN



JOHN D'ARCY



ALEC CRAM



JEFFREY PROUDFOOT



STUART MADNICK

Conceal or Communicate? Organizational Notifications to Stakeholders Following Ransomware Attacks

Research team: Alec Cram, Albert Chan, Jonathan Yuan, and Dennis Joo.

Summary: The paper examines the organizational communications following 101 ransomware attacks. The study's results indicate that stakeholder notifications tend to be either customer-focused or investor-focused, but are rarely both. Findings also reveal that that most notifications contain at least a basic level of detail, but that about one in ten communications are insufficiently informative.

This paper was presented at the Hawaii International Conference on System Sciences in January 2024. This paper is led by Alec Cram, an associate director of UWCISA.



ALBERT CHAN



DENNIS JOO



JONATHAN YUAN



ALEC CRAM



IAN MCKILLOP

Evaluating a Cybersecurity Operations Center Implementation Program in a Regional Healthcare System: Challenges and Lessons Learned

Research team: Alec Cram and Ian McKillop.

Summary: The paper examines an early-stage program to establish a series of cybersecurity operations centers within a large, regional, publicly funded healthcare system. The study's results highlight tensions that emerged related to the oversight structure, guiding framework, performance management, and initiative validation. The authors reveal a series of responses that healthcare leaders can undertake to avoid common pitfalls and achieve positive outcomes from such projects.

This paper was presented at the Hawaii International Conference on System Sciences in January 2024. This paper is led by Alec Cram, an associate director of UWCISA.

FOCUS AREA: DATA ANALYTICS

Addressing Anomalies in Audit Data Analytics

Research team: Efrim Boritz, Greg Shields and Adam Vitalis.

Summary: This paper creates an experimental setting that provides insights into the ongoing debate into how auditors can more effectively evaluate evidence as we move into a more data-centric environment. Specifically, the paper examines how auditors process a long series of anomalies and determine which anomalies to investigate further, and how undertaking such an evaluation impacts auditors' ability to maintain professional skepticism. Data was collected in 2023 and analysis is ongoing. This paper has received support from UWCISA.



EFRIM BORITZ



GREG SHIELDS



ADAM VITALIS

Reducing the Incidence of Biased Algorithmic Decisions Through Feature Importance Transparency: An Empirical Study

Research team: Sepideh Ebrahimi, Esraa Abdelhalim, University of Windsor, Khaled Hassanein, McMaster University and Milena Head, McMaster University.

Summary: As firms move toward data-driven decision making using algorithmic systems, concerns are raised about the lack of transparency of these systems which could have ramifications related to users' trust and the potential for provoking discriminatory decisions.



SEPIDEH EBRAHIMI



ESRAA ABDELHALIM



KHALED HASSANEIN



MILENA HEAD

[This paper](#) finds that feature importance, a common transparency-enhancing approach, is effective when biased recommendations include direct discrimination (e.g., based on protected grounds such as gender) but is of little assistance when discrimination is indirect.

This paper has been accepted for publication at the *European Journal of Information Systems*. This paper is co-led by Sepideh Ebrahimi, a member of UWCISA.

How to Implement a Data Analytics and Emerging Technologies-Enabled Accounting Curriculum

Research team: Duane Kennedy and Theo Stratopoulos.

Summary: [This paper](#) provides a framework to help educators integrate Data Analytics and Emerging Technologies (AET) into the accounting program at their institutions, which will equip students with essential and advanced AET skills to employ in tools like spreadsheets, Tableau, Alteryx, R, Python, RPA, and blockchain. The paper also outlines the strategic development and implementation challenges experienced by the authors in developing their program.

The paper was presented at several conferences prior to 2024 and is forthcoming in the *Journal of Emerging Technologies in Accounting*. The paper is co-led by Theo Stratopoulos, an associate director of UWCISA.

Information Integrity Control Guidelines

Research team: Efrim Boritz and Malik Datardina, Avenir.

Summary: The objectives of the project are to 1) define information integrity and to identify information integrity risks and controls for mitigating those risks, 2) define assurance practices for information integrity services, and 3) interview or survey audit team members about their views on information integrity risks, controls and assurance practices.

Funding is being provided by CPA Canada. Previously, *The Framework for Information Integrity Controls* was published by CPA Canada in April, 2019. Efrim Boritz also assisted the AICPA to develop a guideline on data integrity assurance. This paper has received support from UWCISA.



EFRIM BORITZ



MALIK DATARDINA



ADAM VITALIS

FOCUS AREA: EMERGING TECHNOLOGIES

Does Industry Classification Matter: Evidence from IT Budgets

Research team: Duane Kennedy, Byron Song, Hong Kong Baptist University, and Theo Stratopoulos.

Summary: The paper aims to discover if the industry classification and/or the level of aggregation within a selected classification matter. Empirical studies tend to control for industry structure using proxies from one of the common industry classifications (e.g., SIC, Fama-French, NAICS) and select a level of aggregation within this classification (e.g., SIC2 or SIC3). Given these choices are not justified, one could assume that they do not seem to matter. The paper is being prepared for submission to the *Journal of Information Systems*. This paper is co-led by Theo Stratopoulos, an associate director of UWCISA.



DUANE KENNEDY



THEO STRATOPOULOS



BYRON SONG



TIM BAUER



KRISTA FIOLEAU



BRAD POMEROY

CPA Familiarity with Emerging Technologies and Tools

Research team: Tim Bauer, Efrim Boritz, Krista Fiolleau, Brad Pomeroy, Adam Vitalis

Summary: As part of the Assurance Solutions and Services Project, this paper surveys CPA professionals to examine emerging technologies and tools (T&T's) they encounter or use in practice, and which of these T&T's they most believe will have impact or are of interest in practice. These perspectives offer a glimpse into which T&T's have penetrated the CPA profession workplace the most and which ones require additional factors to be prominent aspects of the CPA profession.

The paper was presented multiple times prior to 2024. In 2024, it was presented in January at both the Auditing Section Midyear Meeting of the AAA in New Orleans, LA

and the Joint Midyear Meeting of the AIS and SET Sections of the AAA in Atlanta, GA and in May at the European Accounting Association Annual Congress in Bucharest, Romania.

The paper is being revised in preparation for submission to the Journal of Emerging Technologies in Accounting. This paper has received support from UWCISA.

Algorithm versus Human Managers: The Impact of Manager Type and Communication Frequency on Auditors' Underreporting Behavior

Research team: Tim Bauer, Samantha Seto, Simon Fraser University, and Jenny Ulla, University of Illinois at Urbana-Champaign.

Summary: This paper examines how auditors respond to varying approaches to managing audits, via new technology or management style. In particular, we predict and find that auditors underreport the time they spend on audit tasks more when the manager in charge of time/budget is a human vs. an algorithm, but increase (decrease) their underreporting as the algorithm (human) manager increases reminders about the budget.

This paper received an Insight Development Grant from the Social Sciences & Human Research Council of Canada. Experimental data was collected in February 2024. The paper was presented at Deakin University (online) in September 2024, Northeastern University in Boston, MA in October 2024, and the 2024 ABO Research Conference in Montreal, QC in October 2024. This paper is co-led by Tim Bauer, an associate director of UWCISA.



TIM BAUER



SAMANTHA SETO



JENNY ULLA

Engagement and Crowding-Out Effects of Leaderboard Gamification on Medical Crowdfunding

Research team: Theo Stratopoulos and Hua (Jonathan) Ye, University of Oklahoma.

Summary: [The paper](#) delves into the multifaceted impact of introducing a top-donor leaderboard in medical crowdfunding. It underscores the need for tailored approaches towards technological gamification features



THEO STRATOPOULOS



HUA (JONATHAN) YE



MICHAEL DONG



VICTOR XIAOQI WANG

for different patient groups and contributes to a deeper understanding of how technological enhancements intersect with healthcare funding efforts.

This paper was published in the *Journal of Management Information Systems*, Vol. 41, No. 3, 2024. This paper is co-led by Theo Stratopoulos, an associate director of UWCISA.

A Scoping Review of ChatGPT Research in Accounting and Finance

Research team: Theo Stratopoulos, Victor Xiaoqi Wang, California State University Long Beach, and Michael Dong, Missouri State University.

Summary: [The paper](#) provides a review of recent publications and working papers on ChatGPT and related Large Language Models (LLMs) in accounting and finance. The aim is to understand the current state of research in these two areas and identify potential research opportunities for future inquiry.

The paper was published in the *International Journal of Accounting Information Systems*, Vol. 55, No. 4, 2024.

This paper is co-led by Theo Stratopoulos, an associate director of UWCISA.

The Impact of Anthropomorphism on Users' Adoption of Conversational Agents' Recommendations

Research team: Sepideh Ebrahimi, Christian Matt, University of Bern and Izak Benbasat, University of British Columbia.



IZAK BENBASAT



SEPIDEH EBRAHIMI



CHRISTIAN MATT

Summary: The paper intends to investigate whether the anthropomorphism of CAs impact users' perception of the quality of their recommendation and whether participants are likely to be more forgiving of low quality recommendations when they are given by anthropomorphized agents.

The paper is currently at the manuscript write-up stage. This paper is co-led by Sepideh Ebrahimi, a member of UWCISA.

A Meta-Analysis of the Factors Influencing Users' Acceptance of Conversational Agents' Advice

Research team: Sepideh Ebrahimi, Samira Farivar, Carleton University and Kamran Eshghi, Laurentian University.

Summary: The paper investigates the factors that influence people's trust in conversational agents and adoption of their advice and examine whether meaningful differences exist in the impact of these factors across different fields (e.g., commerce, healthcare).

The paper is currently at the data analysis stage. This paper is co-led by Sepideh Ebrahimi, a member of UWCISA.



SEPIDEH EBRAHIMI



KAMRAN ESHGHI



SAMIRA FARIVAR

FOCUS AREA: INTERNAL AUDIT

Internal Auditors' Experience with Emerging Technologies and Tools

Research lead: Efrim Boritz.

Summary: The paper surveys IIA Toronto chapter members to understand their *experience with emerging technologies* and tools.

The completed survey served as the basis for presentations to the IIA Toronto Chapter and at the Municipal Internal Auditors Association of Ontario Fall Workshop in 2023.

The paper is currently under review at the *International Auditing Journal*. This paper has received support from UWCISA.

Communicating Value Creation in Integrated Reporting

Research lead: Efrim Boritz.

Summary: The paper aims to review and evaluate the presentation of value creation information in integrated reports.

This paper is currently undergoing pilot testing but has been stalled due to lack of human resources. This paper is led by Efrim Boritz, executive director of UWCISA.

Enhancing CPA competencies for Internal Audit Roles

Research team: Adam Vitalis, Efrim Boritz, and Laura Simeoni.

Summary: [The paper](#) examines the current and future competency requirements for internal audit professionals and envisions curriculum requirements for developing entry-level career opportunities in this field.

The paper was published in the *International Auditing Journal*, Vol. 28, No. 3, 2024. This paper received support from UWCISA.



EFRIM BORITZ



ADAM VITALIS



LAURA SIMEONI

FOCUS AREA: ESG ASSURANCE

Do Differences in CFO Background Matter to Financial Statement Quality? An Application of Machine Learning and Textual Analytics

Research team: Louise Hayes, University of Guelph and Efrim Boritz.

Summary: The paper evaluates whether CPA competencies contribute to firm performance and reporting quality, including both conventional financial reporting and ESG-oriented reporting. Further, the paper explores uses of machine learning technologies with applications to accounting and auditing.

This paper was presented at several conferences prior to 2024. In 2024, it was presented in May at the 34th Audit & Assurance Conference in Dublin, Ireland, in June at the CAAA Annual Conference in Halifax NS, and in August at the AAA Annual Conference in Washington DC. The paper is being revised for submission to a journal. This paper is co-led by Efrim Boritz, executive director of UWCISA.



LOUISE HAYES



EFRIM BORITZ

Do Firms Provide Informative Disclosures In an Environment of Extreme Uncertainty? Evidence From the COVID-19 Pandemic

Research team: Changling Chen, Theo Stratopoulos, Victor Xiaoqi Wang, California State University Long Beach, and Bin (Betty) Xing, Baylor University.

Summary: The paper analyzes firm reactions in the first quarter (January-March) of 2020, as they are manifested in firm disclosures and the value of accounting information, in a setting where there were no prior disclosures to follow nor guidance from the Security and Exchange Committee (SEC).

This paper is currently under review at a journal. This paper is co-led by Theo Stratopoulos, an associate director of UWCISA.

The Impact of IT Capability on ESG Performance

Research Team: Theo Stratopoulos, Yiyang Zhang, Youngstown State University, and Russell Barber, University of Colorado-Denver.

Summary: The paper investigates the link between a firm's IT Capability and its Environmental, Social, and Governance (ESG) performance, addressing the empirical gap concerning the impact of technology investments on ESG outcomes.

The paper was presented at the AIS mid-year meeting in February 2025. The paper is co-led by Theo Stratopoulos, an associate director of UWCISA.



CHANGLING CHEN



THEO STRATOPOULOS



VICTOR XIAOQI WANG



BIN (BETTY) XING



YIYANG ZHANG



RUSSELL BARBER



**We welcome
new partners
to help
us achieve
UWCISA's
mission.**



SPONSORING OF RESEARCH SYMPOSIA

Information Integrity and Information Systems Assurance Symposium

The 13th Biennial Research Symposium was held in a hybrid format in September 2023. A selection of papers from the symposium were published in a special issue of the International Journal of Accounting Information Systems in October 2024.

The 14th Biennial Research Symposium is scheduled to be held in a hybrid format September 25-27, 2025. Please see our announcement and call for papers.

In-person sessions will be held at EY, 100 Adelaide St W, Toronto, ON and online sessions will be held on Zoom.

EDUCATION AND KNOWLEDGE TRANSFER

COURSES AND PROGRAMS

IT Controls and Assurance Innovation

Under the leadership of Malik Datardina of Avenir, UWCISA sponsored the development of a course on technology, assurance, innovation, and value creation. The course explores exponential technologies such as the Internet of Things (IoT), blockchain and AI.



MALIK DATARDINA

for the first time in Spring 2023 and an undergraduate version was launched in Fall 2024.

Internal Audit

Under the leadership of Adam Vitalis, and with input of an advisory committee of representatives from IIA Canada and IIA Toronto Chapter, UWCISA sponsored the development of an undergraduate internal audit course. Upon creation, it was the only such course being offered at Canadian universities. In Fall 2024, a new specialization in the SAF program was approved related to rotation programs, with the internal audit course one of the required courses to earn this specialization. Adam continues to work with members of the IIA Toronto Chapter to build an Internal Audit specialization in SAF.



SASAN SAIY

Sustainability and Financial Management (SFM) program

The [Sustainability and Financial Management \(SFM\) program](#) is a relatively new program developed at the University of Waterloo in collaboration with the School of Accounting and Finance (SAF) and the School of Environment, Enterprise and Development (SEED). Students can earn their CPA or CFA designation, grounding their accounting and finance skills with faculty in SAF while gaining a deep understanding of sustainability issues from faculty in SEED. Sasan Saiy is a co-director of the SFM program and Adam Vitalis is a member of the SFM curriculum committee.



ADAM VITALIS

Audit Data Analytics

Giselle Obendorf, with input from UWCISA directors, developed a Masters of Accounting course on audit data analytics. The course explores how to use data analytic techniques to address both external and internal audit issues. The course was offered at the graduate level



THEO STRATOPOULOS

Emerging Technologies Advisory Group

Under the leadership of Theo Stratopoulos and Nancy Vanden Bosch, UWCISA has organized a team of industry experts with the objective of meeting periodically to discuss and identify emerging technologies and how they will affect the curriculum in SAF programs. The team also includes Will Xiang (Independent Cybersecurity Consultant), Andrew Morgan (Partner Assurance, EY),



NANCY VANDEN BOSCH



GISELLE OBENDORF

Bo Wang (VP Taxation, Treasury & Intelligent Process Automation, Cineplex), May Leung (Senior Manager Global Audit & Assurance Analytics, Deloitte), and Brandon Weekes (Partner Assurance – Controls, Deloitte).

School of Accounting and Finance (SAF) Master's Research Paper

The MAcc Program in SAF at the University of Waterloo offers students the option to complete a Master's Research Paper (MRP) instead of a 4th elective course, over the eight months (Jan–Aug) of the program.

In August 2024, two students successfully completed an MRP in the assurance area: Simreyna Kang, as supervised by Tim Bauer, and Matthew Tam, as supervised by Brad Pomeroy and Adam Vitalis. A third student successfully completed an MRP in the emerging technologies and ESG area: Ella Koay, as supervised by Theo Stratopoulos.

TEXTBOOKS AND CURRICULUM

Data Analytics and Emerging Technologies

Under the leadership of Theo Stratopoulos, UWCISA sponsored the development and rollout of a [Data Analytics and Emerging Technologies \(DA&ET\) curriculum](#) within the accounting program at the University of Waterloo. For more details about the curriculum please read the article by Duane Kennedy and Theo Stratopoulos: [How to Implement a Data Analytics Enabled Accounting Curriculum](#).

Robotic Process Automation

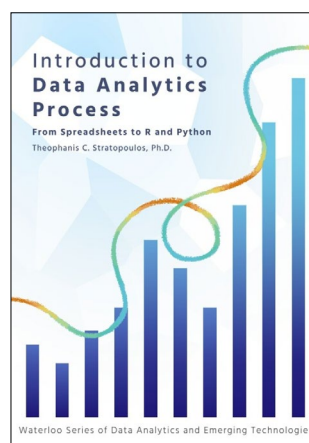
Under the leadership of Theo Stratopoulos, UWCISA has arranged an academic partnership with UiPath to provide SAF students with access to its software and teaching material.

Blockchain

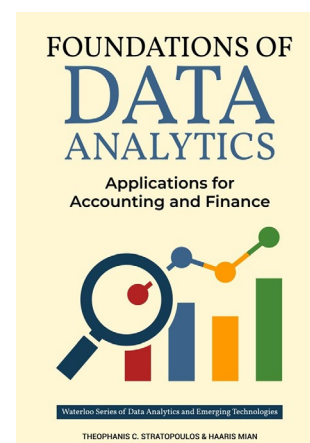
Under the leadership of Theo Stratopoulos, UWCISA has established a connection with the founders of AstraCode, a startup company supporting low code blockchain implementation, with the intention to leverage their use cases in emerging technologies courses like AFM 241 – Impact of Technology on Business.

Waterloo Series on Data Analytics and Emerging Technologies

To establish SAF as a leader in data analytics and emerging technologies, UWCISA – through the leadership of Theo Stratopoulos – has embarked on a campaign to develop a series of books, cases, and other teaching material. Royalties generated from sales to SAF students are donated to UWCISA to support scholarships. Two textbooks have been published to date:



[Introduction to Data Analytics Process: From Spreadsheets to R and Python \(First Edition\)](#) by Theo Stratopoulos; published by VitalSource.



[Foundations of Data Analytics: Accounting and Finance Applications](#) by Theo Stratopoulos and Haaris Mian; published by VitalSource.

Two integrated cases have also been developed:

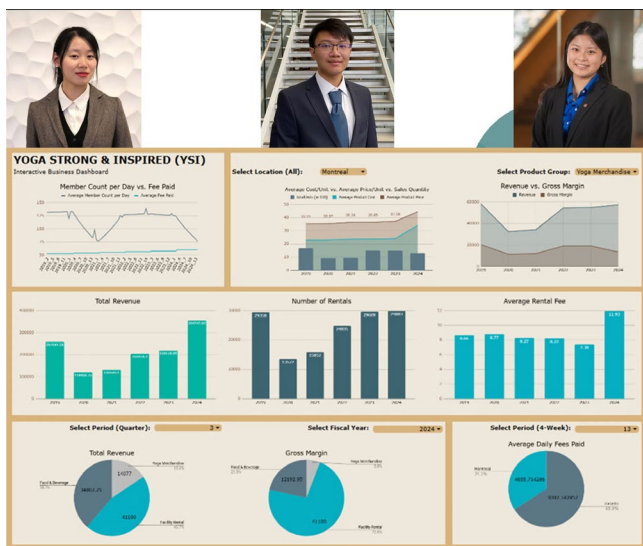
- › **Yoga Studio** by Theo Stratopoulos, Nancy Vanden Bosch, and Julie Robson; the case and its dataset were featured in the 5th Annual Dashboard Competition (2024) and can be used to introduce data analytics in tax and performance management classes.
- › **Convenience Store Beverage Sales** by Theo Stratopoulos, Nancy Vanden Bosch, and Dan Rogozynski; the case and its dataset can be used to introduce data analytics in tax and performance management classes.

STUDENT CASE COMPETITIONS, MENTORSHIP, AND AWARDS

Interactive Business Dashboard Competition

Co-sponsored by UWCISA and the ISACA Toronto Chapter and led by Theo Stratopoulos, the [5th Annual Interactive Business Dashboard Competition](#) was held in December 2024. The competition began with close to 70 teams (all 444 AFM 112 students). Five teams advanced to the final round and presented their dashboards to a panel of industry and academic experts: Abhishek Deswal (Senior Accountant at Sagen), Melissa Robertson (Principal, Research & Thought Leadership at CPA Canada), and Nancy Vanden Bosch (Professor at SAF).

Congratulations to the first prize winners who will share the \$1,000 prize: Christine Miao, Anthony Quach, and Kailey Qiu.



Predictive Analytics Competition

Sponsored by UWCISA and led by Theo Stratopoulos and Haaris Mian, the [3rd Annual Predictive Analytics Competition](#) was held in August 2024. The competition began with 392 second year SAF students across 77 teams, who showcased their analytical skills and innovative thinking. Four teams advanced to the final round and presented their findings and recommendations to a panel of industry and academic experts: Nick Vukelic (Director, Strategic Data and Analytics at Yorkville University), Fekremariam Tefera (Independent Advisor in Data and Revenue Operations), Anila Rudrabhatia (Senior Product Owner, Manulife Bank), and Jeremy Adamson (AI Consultant and Author of *Geeks with Empathy and Minding the Machines*).

Congratulations to the first prize winners: Saharsh Suryadevara, Muhammad Hemani, Robert Davis, Ambrose Karklins-White, and Aiden Plate.



A4S Competition

Sasan Saiy and Adam Vitalis have partnered with Brookfield to mentor SFM student teams for the annual [A4S Competition](#). The competition challenges teams to develop sustainable business models. Teams competing in the 2025 competition began preparing their materials in Fall 2024, with finals to occur in Winter 2025. The team who competed in the 2024 competition won first place!

Congratulations to the winning team and [read about their story](#): Harrison Cormier, Dhiya Susan Eapen, Ethan Fraser, Vincent Guo, and Jaiden Vitalis.



PhD and Academic Career Mentorship Program in Audit & Assurance, Cybersecurity, or Accounting Information Systems (AIS)

Under the leadership of Tim Bauer and sponsored by ISACA Toronto Chapter, UWCISA created the [UWCISA PhD and Academic Career Mentorship Program in Audit & Assurance, Cybersecurity, or Accounting Information Systems \(AIS\)](#). Its purpose is to provide UW SAF undergraduate and MAcc students who are interested in pursuing a PhD with an opportunity to learn more about an academic career in audit, assurance, cybersecurity, AIS, or related fields.

In 2024, three students received an award and they were mentored by one or more of UWCISA members, Tim Bauer, Brad Pomeroy, and Adam Vitalis. Program activities included attending research presentations, the ABO research conference (through support from Tim Bauer and a SSHRC grant), and meetings with mentors to learn about research, teaching, and other academic duties.

PRACTITIONER RESOURCES

AI and Other Technologies, Cybersecurity, and More

[ThinkTwenty20 Magazine](#) invited UWCISA to convert several magazine articles into [podcasts](#). These podcasts span a variety of AI and technology-related, cyber-related, and other topics. The podcasts are also available through UWCISA's [Coffee Break PD™](#) for individuals seeking CPD/CPE credit.

CPD SERVICE AND WORKSHOPS

COFFEE BREAK PD™

Under the leadership of Malik Dataridina, in the Fall of 2023 UWCISA created [Coffee Break PD™](#), which offers short-form CPD to practitioners for a fee. Additional [course offerings](#) were offered throughout 2024 and continue to be available to earn CPD/CPE credit.



WORKSHOPS

Workshops are generally half day sessions on topics of interest to academics and practitioners. [Past workshops](#) have covered topics such as Data Value Creation, Robotic Program Automation, and AI. Typically, workshops invite presentations from panels composed of industry leaders as well as academics and give rise to extensive interaction between the panel and audience members.

Workshops offered in 2024 included:

1. Prompt Engineering Essentials for CPAs and Business Pros: Unlocking AI's Potential; June & July.
2. Generative AI Tools and Prompt Engineering Essentials; October & December.
3. Alteryx; November & December.

Workshops to be offered in 2025 include:

1. [UiPath](#); March.
2. [ChatGPT Essentials for Internal Auditors](#); March.
3. [SOC 2 Essentials](#); April.
4. [Alteryx](#); May.



INTERACTION

ALLIANCES AND RELATIONSHIPS

As part of its mission to interact with academe and practice, UWCISA 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, UWCISA supported the following activities and organizations:

AICPA

- › Efrim Boritz is a member of the AICPA's Trust Services Information Integrity Task Force and Cybersecurity Assurance Task Force.
- › Theo Stratopoulos is a member of the joint CPA Canada/AICPA AI Project Advisory Group.

AUDITING AND ASSURANCE STANDARDS BOARD (AASB)

Tim Bauer was a member of the AASB Audit Evidence Advisory Group, who completed their work in 2024.

CPA CANADA

- › Malik Datardina is a member of CPA Canada's Audit and Assurance Technology Committee.
- › Louise Hayes is a member of CPA Canada's Audit and Assurance Technology Committee.

- › Theo Stratopoulos is a member of CPA Canada's Audit Data Analytics Task Force (INACTIVE).
- › Theo Stratopoulos is a member of the joint CPA Canada/AICPA AI Project Advisory Group.

INSTITUTE OF INTERNAL AUDITORS (IIA)

Adam Vitalis is the UWCISA liaison with IIA and is leading UWCISA's initiative in assisting the School of Accounting and Finance to maintain its accredited program under the IIA's IAEP (Internal Audit Education Program). Adam and Tim Bauer are updating course offerings to continue this initiative.

ThinkTWENTY20 Magazine

UWCISA has an alliance with ThinkTWENTY20 Magazine and various members of UWCISA contribute to the magazine's articles and/or create podcasts from the magazine's articles.

University of Waterloo Cybersecurity And Privacy Institute (CPI)

- > Efrim Boritz is a member of the CPI's Operational Security expertise area.
- > Alec Cram is on the CPI Board of Directors and is a member of the CPI's Human and Societal Aspects of Security and Privacy, and Operational Security expertise areas.
- > Theo Stratopoulos is a member of the CPI's Human and Societal Aspects of Security and Privacy, Data Science Security and Privacy, and Privacy-enhancing Technologies expertise areas.

Waterloo Artificial Intelligence Institute (Waterloo.AI)

- > Efrim Boritz is an academic member of Waterloo.AI.
- > Sepideh Ebrahimi is an academic member of Waterloo.AI.
- > Theo Stratopoulos is an academic member of Waterloo.AI.

EDITORIAL BOARDS AND JOURNALS

- > Accounting Forum – Krista Fiolleau
- > Accounting, Organizations, and Society (AOS) – Tim Bauer
- > Accounting Perspectives (AP) – Louise Hayes, Krista Fiolleau (associate editor), Adam Vitalis (associate editor)
- > Auditing: A Journal of Practice and Theory (AJPT) – Tim Bauer (also ad-hoc editor), Adam Vitalis
- > Contemporary Accounting Research (CAR) – Tim Bauer (also ad-hoc editor), Krista Fiolleau
- > Information Systems Journal (ISJ) – Alec Cram (associate editor)
- > International Journal of Accounting Information Systems (IJAIS) – Efrim Boritz, Theo Stratopoulos (associate editor)
- > Journal of Emerging Technologies in Accounting (JETA) – Efrim Boritz (editor)
- > Journal of Information Systems (JIS) – Louise Hayes (editor)

Special issue of the *International Journal of Accounting Information Systems*

Theo Stratopoulos and Victor Wang are the guest editors of the *International Journal of Accounting Information Systems* for a special issue on *Artificial Intelligence, with a focus on Large Language Models, in Accounting*. This special issue aims to explore the transformative impact of AI and LLMs on accounting practice and research. A call for papers was placed July 17, 2023 and the special issue will be published in 2025.

Special issue of *Accounting Perspectives*

Tim Bauer is the guest editor of *Accounting Perspectives* for a special issue on *Audit and Assurance Research*. This special issue aims to provide insights into how audit and assurance practices – in either financial statement or non-financial statement contexts – are being carried out or demanded by individuals, teams, organizations, and/or automated tools. A call for papers was placed in May 2024 and the special issue will be published in 2026.

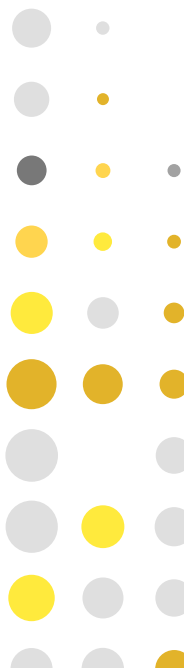


DISSEMINATING BEST PRACTICES

As further commitment to its mission to interact with academe and practice, UWCISA personnel made presentations at and attended a number of conferences and workshops during 2024.

TIM BAUER

- › Moderator of a panel providing insights on *Career Advice from Successful Academics* at the AAA Auditing Doctoral Consortium; New Orleans, LA, January 2024.
- › Presented *The Influence of Client Incivility and Coping Strategies on Audit Professionals' Judgments* at the University of Michigan-Dearborn; Dearborn, MI, February 2024.
- › Presented *Algorithm versus Human Managers: The Impact of Manager Type and Communication Frequency on Auditors' Underreporting Behavior* at Deakin University; online, September 2024.
- › Presented *Emerging Services and Technologies for CPA Firms and CPA Professionals* at a workshop for the Halton-Peel CPA Ontario Association; online, September 2024.
- › Presented *Algorithm versus Human Managers: The Impact of Manager Type and Communication Frequency on Auditors' Underreporting Behavior* at Northeastern University; Boston, MA, October 2024.
- › Presented *Algorithm versus Human Managers: The Impact of Manager Type and Communication Frequency on Auditors' Underreporting Behavior* at the Accounting Behavior and Organizations Research Conference; Montreal, QC, October 2024.
- › Panelist providing insights on *How to Give Great Discussions at Conferences* at a workshop for the Junior Accounting Scholars Organization; online, December 2024.



EFRIM BORITZ

- › Presented *CPAs' Experience with Emerging Technologies* at the AAA Audit Mid-year Meeting; New Orleans, LA, January 2024.
- › Presented *CPAs' Experience with Emerging Technologies* at the AAA AIS/SET Mid-year Meeting; Atlanta, GA, January 2024.
- › Presented *CFO Credentials, Corporate Performance and Reporting Quality: A Canadian Perspective* at the Audit & Assurance Conference; Dublin, Ireland, May 2024.

ALEC CRAM

- › Presented *Evaluating a Cybersecurity Operations Center Implementation Program in a Regional Healthcare System: Challenges and Lessons Learned* at the Hawaii International Conference on System Sciences; Honolulu, HI, January 2024.
- › Presented *Conceal or Communicate? Organizational Notifications to Stakeholders Following Ransomware Attacks* at the Hawaii International Conference on System Sciences; Honolulu, HI, January 2024.
- › Associate Editor of the European Conference on Information Systems for its 'Future of Work' research track; Paphos, Cyprus, June 2024.

THEO STRATOPOULOS

Presented *A Scoping Review of ChatGPT Research in Accounting and Finance* at the Canadian Accounting Association Annual Meeting; Halifax, NS, June 2024.

ADAM VITALIS

With Krista Fiolleau, presented a session on *IT Competencies for Internal Auditors* at the IIA Toronto Symposium; Toronto, ON, May 2024.

KRISTA FIOLEAU

With Adam Vitalis, presented a session on *IT Competencies for Internal Auditors* at the IIA Toronto Symposium; Toronto, ON, May 2024.

MALIK DATARDINA

- › Led multiple GenAI workshops and presentations for accounting professionals throughout 2024:
 - *GenAI Solutions for CPAs*, a half-day workshop for UWICSA and CPA Ontario.
 - *Can Gen AI Help CPAs*, a full-day intensive workshop for CPA New Brunswick.
 - *Practical Applications for Today's Practice*, one in a series of targeted presentations for CPA Ontario.
 - *The Next-Gen CPA*, one in a series of targeted presentations for CPA Ontario.
 - *Demystifying GenAI*, one in a series of targeted presentations for CPA Ontario.
 - *Generative AI vs. Remote VAs* in Tim Ferriss's '4-Hour Workweek', a comparative analysis session.
- › Co-authored *Mastering Digital Assurance in the Age of AI Certificate*, a course for CPA Ontario; online, October 2024.
 - The course provided comprehensive training on conducting assurance services in digital environments.
- › Panelist providing insights on *AI & Data in the Classroom* for CPA Ontario; online, 2024.
 - The panel discussed integration of AI and data analytics in accounting education.



- › Panelist for *How Technology is Transforming Accounting and Business Services* at the University of Toronto; Toronto, ON, November 2024.
 - The panel explored technological disruption across accounting and business service sectors.
- › Presented *Blockchain Demystified: A Beginner's Guide for CPAs* at a professional development course for CPA Ontario; online, December 2024.
 - The course provided an introductory look at the bitcoin blockchain and how it works and also looked at compliance issues related to blockchain.
- › Presented *Negotiating and Conducting an Assurance Engagement* for CPA Ontario; 2024.
 - The session covered best practices in modern assurance engagements.
- › Presented *Balancing Innovation with Regulation: AI, Ethics & Compliance* for CPA Ontario; 2024.
 - The session examined regulatory, compliance issues as well as the challenge of managing the "alignment problem" as it relates to "classic AI".
- › Hosted *Regulating Digital Technologies: A Path Forward*, a fireside chat with Keith Jansa for CPA Ontario; online, March 2024.
 - The discussion explored approaches to effective technology regulation.
- › Presented *From Trends to Troubles: Exploring our Data-driven World*, a half-day course offered by CPA Ontario; online, March 2024.
 - The course explored the dual-nature of data, providing immense value and opportunities but also discussing privacy, security, and societal risks.



COMMUNICATION

UWCISA shares information with stakeholders and other interested parties through various sources: our website and main portal; our key social networks like Facebook, LinkedIn, X, and Instagram; and our weblog.

UWCISA has once again produced an online annual report for 2024. UWCISA created its first online annual report to summarize its activities in 2023; prior to 2023, reports were disseminated both electronically and in hardcopy formats. Past reports from 2015–2023 are [available here](#) and reports from 1998–2015 can be [requested here](#).

 [UWCISA Facebook](#)

 [UWCISA LinkedIn](#)

 [UWCISA X](#)

 [UWCISA Instagram](#)

 [UWCISA Website](#)

Our website includes calls for papers and research proposals, a resources section, a number of links and downloadable content, and the UWCISA blog.

 [UWCISA Weblog](#)

Malik Datardina creates content for the blog about artificial intelligence, technology, security, and innovation in the world of audit and business.

CENTRE PERSONNEL

DIRECTORS



J. EFRIM BORITZ

PhD, FCPA, FCA, CISA
Professor and CPA Ontario
Chair in Accounting
Executive Director, UWCISA



TIM BAUER

PhD, CPA, CA
Associate Professor and J. Page R. Wadsworth Junior Chair
in Accounting and Finance
Associate Director and Executive Director Elect, UWCISA



W. ALEC CRAM

PhD, CISA, CISSP
Associate Professor
Associate Director, UWCISA



ADAM VITALIS

PhD, CPA (MN)
Assistant Professor
Associate Director, UWCISA



THEOPHANIS STRATOPOULOS

PhD
PwC Professor
Associate Director, UWCISA

FACULTY



NANCY VANDEN BOSCH

MAcc, CPA, CA, CMA
Stan Laiken Teaching Fellow
Continuing Lecturer



DARREN CHARTERS

JD, MBA
Continuing Lecturer



SEPIDEH EBRAHIMI

PhD, MSc, BSc
Assistant Professor



KRISTA FIOLEAU

PhD, BComm, CPA, CA
Associate Professor



HAARIS MIAN

BBA
Lecturer



GISSELLE OBENDORF

BBA, MA, CPA, CA
Lecturer



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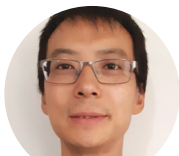
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Administrative Support



ELAINE BAUER*

Administrative Support



LAILA ROHANI

PhD
Marketing and
Communications Manager



JENNY ROTHWELL

Administrative Support

*Ann Bisch retired from her role of Administrative Support effective September 11, 2024. We want to express our gratitude to Ann for her tireless work ethic, can-do attitude, and extraordinary service to UWCISA for nearly two decades. Elaine Bauer took over the role of Administrative Support effective September 23, 2024.

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*The year brought changes to our Board of Directors. CPA Canada stepped down from the Board and as a broad Sponsor effective December 31, 2024. We want to express our gratitude to CPA Canada for their support of UWCISA since its inception and for their role in its governance for many years. We look forward to continuing our relationship with CPA Canada and partnering on specific initiatives that progress our shared objectives with respect to research, education and knowledge transfer.

**The Sponsor Representative for the IIA Toronto Chapter changed from Sharon Mohip to Piyusha Weerasinghe effective September 30, 2024. We are grateful to Sharon for her service during her time on the Board. We look forward to the IIA Toronto Chapter's continued governance and guidance through Piyusha's leadership.

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THANK YOU

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



We welcome inquiries, suggestions and comments.



Tim Bauer, Executive Director Elect
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