



ACADEMIC COUNCIL REPORT

SESSION:

Public

ACTION REQUESTED:

Decision
 Discussion/Direction
 Information

Financial Impact Yes No

Included in Budget Yes No

TO: Academic Council

DATE: January 28, 2020

PRESENTED BY: Les Jacobs, Vice-President, Research and Innovation

SUBJECT: Establishment of the Digital Life Institute at Ontario Tech University

COMMITTEE/BOARD MANDATE:

Recommendation:

The Research Board, at its November 7, 2019 meeting, reviewed the proposal by Dr. Isabel Pedersen from the Faculty of Social Science and Humanities to establish the Digital Life Institute and unanimously approved the motion of a recommendation that it go forward to Academic Council.

We request that Academic Council review the Digital Life Institute proposal and find it appropriate to recommend to the Board of Governors for approval.

BACKGROUND/CONTEXT & RATIONALE:

The Digital Life Institute will integrate a trans-disciplinary community of researchers interested in examining the human and social dimensions of current and projected digital technologies, with the overarching goal of advancing our understanding of their human impact. The Digital Life Institute will be a hub for the critical analysis of digital technologies and will build upon an extant community of interdisciplinary scholars interested in the social implications of disruptive technological advancement. It will position the social and ethical analysis of technology at the forefront of Ontario Tech University's role as a leader advancing the research mandate of "technology with a conscience" within the context of national and international research spheres.

Disruptive technology is changing how people live, in vastly different ways. Even in global innovation and marketing spheres, digital life technology is clearly a controversial concept highlighting issues of privacy, security, identity, human dignity, quality of social connection, and cultural values. The emerging notion of a thoroughly quantified, observable, and perpetually mediated self will be transformative in myriad ways, propelling discussions of personal privacy, human agency, creativity, consent, education, and appropriate legal and ethical modes of protection and guidance in these new tech-infused futures. Digital technologies will continue to evolve in ways that impact social structure, culture, law and governance, politics and political

economy, business, and education. The Digital Life Institute will fill this knowledge gap by integrating a community of trans-disciplinary scholars and researchers with the goal of reaching a more holistic understanding of the impact of technology on humans and society.

Digital Life research does not have a large, dedicated research home in Canada. Similarly focused large scale research centres in the United States include the MIT Media Lab (<https://www.media.mit.edu/>), and Data & Society in New York City, which is a not-for-profit organization that grew out of New York University (NYU), which is now composed of several university, civil society, and business entities (<https://datasociety.net/>). Complementary research centres in Canada with which the Digital Life Institute could potentially form partnerships include the Centre for Law, Technology and Society at the University of Ottawa (<https://techlaw.uottawa.ca/>) and the Inclusive Design Institute at the University of Toronto (<https://inclusivedesign.ca/>). The Digital Life Institute could also serve as a hub for the social and cultural analysis that will surely form a central aspect of the new partnership between Ontario Tech and OCADU going forward, given that Drs. Pedersen, Slane and Tokuhiko have already been involved in the first collaborative project between our institutions on the Digital Human Connection.

The Digital Life Institute is a logical extension of infrastructure and resources currently dedicated to Digital Life research at Ontario Tech. The flourishing of digital life research will be appreciated through banding together existing entities under the umbrella of the Digital Life Institute: including the Digital Life Research Group, Decimal Lab, STEAM 3D Maker Lab, the Laboratory for Games and Media Entertainment Research (GaMER Lab), Human Machine Lab, and Sigma Lab.

Given the strategic priority of broadening and intensifying Ontario Tech's research agenda under the broader theme of "technology with a conscience," the various entities that will be housed under the umbrella of the Digital Life Institute will benefit from the efficiencies and strengths that joining together brings. In particular, the Digital Life Institute aims to support collaborations and partnerships in the following ways:

- Infrastructure: Leveraging grants and donations to support a project coordinator position; shared position of technician maintaining archive and other project based technologies; shared technologies for research projects (e.g. robots, sensors, wearable devices)
- Space: Facilitate use of existing lab space for collaborative projects; aim to support establishment of new Living and Learning Lab space, which could be used by faculty across all of Ontario Tech;
- Networking: Provide a hub for incubating new project ideas;
- Partnerships: Provide a broader central entity with which organizations and donors could more easily see themselves affiliated;
- Students: Provide a hub for graduate students both within and outside of FSSH, FEd, FBIT and FESNS to work with faculty in social science and humanities disciplines, and to interact with other students across disciplines interested in Digital Life research. This could include supporting the Ontario Tech-OCADU partnership, which similarly aims to bring together engineering students with artists and designers, with the aim of improving the sophistication and sensitivity of the process of technology development.

Research Mandate

The Digital Life Institute will bring together a trans-disciplinary community of researchers interested in examining the human and social dimensions of current and projected digital technologies, with the overarching goal of advancing our understanding of their human impact. The Digital Life Institute will be a hub for the critical analysis of digital technologies and will build upon an extant community of interdisciplinary scholars interested in the social implications of disruptive technological advancement, from philosophical, empirical, and theoretical perspectives, supporting production of new knowledge, new means of mobilizing that knowledge, and new applications of that knowledge. It will bring the social and ethical analysis of technology to the forefront, positioning Ontario Tech University as a leader, advancing the research mandate of "technology with a conscience." The Institute will concentrate on digital life as a

social and cultural turn, with specific focus on: (1) human subjectivity, bodies, agency, experiences, perceptions, and identities; (2) technological disruption, emergence, innovation, future plans, policies, practices, and the intended/unintended consequences and possibilities that result from these developments.

Goals:

- To become a globally recognized hub for theoretical and applied social science and humanities research in human life lived with and through digital technology, thus expanding the breadth and depth of Digital Life scholarship.
- To stimulate productive engagement between social scientists, humanists, engineers, computer scientists, policy makers and the public to critically assess the impact of technological advancement on society.

The deliberately broad research mission of the Digital Life Institute is designed to advance our understanding of digital life. Methodologies are drawn from humanities and social science perspectives, in dialogue with both technology development, applications, and artistic practice. The Digital Life Institute will become a lively venue for debates, argumentation, discussion and design within domains key to human thriving, such as ethics, democracy, subjectivity, education, and social justice. Issues to be addressed include human agency, culture, power and control, equity, identity, creativity, and governance. The philosophical scope includes transhumanism & posthumanism, humanities fields long associated with artificial Intelligence (AI) and other human capability enhancement technologies.

The Digital Life Institute will provide a base from which to integrate researchers and labs from across the university, including Digital Life Research Group, Decimal Lab, STEAM 3D Maker Lab, the GaMER Lab, Human Machine Lab and Sigma Lab. The Digital Life Institute will further serve as a base for enhancing existing partnerships and forging new ones with national and international research centres and labs engaging in human-centered research on digital technologies. The Digital Life Institute will stimulate interaction among scholars through research collaborations, knowledge mobilization events (symposia, conferences, speaker series), and work-in-progress supports (idea jams, co-design and maker workshops, work-in-progress workshops).

The institute plans to host visiting scholars and post-doctoral fellows, and to facilitate the inter-disciplinary training of new Digital Life scholars by providing access to networks, archives, equipment and collaborative opportunities in one centralized physical and virtual space.

RESOURCES REQUIRED:

The Digital Life Institute will utilize the space that is currently housing the Decimal Lab at Bordessa Hall at 55 Bond St in Oshawa, as well as the Decimal Lab space within the Centre for Social Innovation (CSI) at 192 Spadina Ave, Toronto (<https://socialinnovation.org/location/192-spadina/>). These spaces do not require any additional renovation or equipment, as they are part of collective spaces that have access to phones, wifi, and printers.

Since the Digital Life Institute builds on existing faculty collaborations and labs, a main area of growth is the acquisition of staff to help with coordination. We therefore consider the main goal for the first two years to be to establish a stable means of funding an Institute Coordinator who will be tasked with 1) managing needs and providing administrative support to all of the Digital Life Institute projects and grants acquisition, both ongoing and in development or proposal stages, and 2) providing administrative support for publicity and marketing for projects and events. Ideally this will be a full time job at \$42,000 annually, but our initial aim is half-time at \$21,000. All steering committee members will be encouraged to include funding for the project coordinator in grant applications. We are seeking internal contributions for this position (from the Deans, President's Office) to begin with, as well as working towards a submitting a SSHRC Partnership Grant application in February 2021 requesting up to \$500,000 per year for five years.

Dedicated tech support is a longer-term goal of the Digital Life Institute fundraising efforts. All of our labs suffer from outdated technology or technology that needs maintenance and updating: by pooling our grant monies and seeking donors to this end, we hope to be able to fund a tech support position as well, over the course of the next two years.

Dr. Pedersen has secured tri-council funding for Digital Life Institute because it is one of the major projects vetted through the CRC peer-reviewed renewal process, which she was awarded to support the growth of this infrastructure. If passed, the Digital Life Institute will be the first research entity to secure *both* tri-council vetted funding *and also* go through the Ontario Tech University's rigorous procedure to establish an entity.

IMPLICATIONS:

Ontario Tech University will benefit greatly from the establishment of the Digital Life Institute, the first research institute at our university. The Institute will enhance Ontario Tech's reputation in the area of multi-disciplinary Digital Life studies. Dr. Pedersen is already globally renowned as a leader in this emerging field. Establishing the Digital Life institute will both recognize our institution's existing expertise and catalyze continued and sustainable growth in research capacity in this area.

An Institute will better serve its research partners by providing a permanent platform for coordination, and will serve as a magnet for others working in the field within the GTA and beyond. Importantly, The Digital Life Institute will further enhance the credibility of its existing networks and lend greater support for Ontario Tech University researchers, including those who currently do not have proper affiliation with graduate programs or a pool of graduate trainees. It will empower international teams seeking funding, formalize extant research partnerships across Ontario Tech Faculties, and facilitate formal relationships with national and international partners, for instance by lending Digital Life expertise to the existing partnership between Ontario Tech University and Shizuoka University in Japan, in which Drs. Kapralos, Hung, and Uribe Quevedo (FBIT) are already central.

ALIGNMENT WITH MISSION, VISION, VALUES & STRATEGIC PLAN:

In addition to aligning closely with Ontario Tech University's overall theme of "technology with a conscience," the Digital Life Institute aligns with the general goals of the Strategic Research Plan as well as with several of the identified priority research areas. Namely, the Digital Life Institute, like Ontario Tech as a whole, seeks to:

- Build effective and sustainable partnerships with our academic and scientific collaborators, and with industry and community-based agencies and organizations,
- Enable our researchers to become global leaders and innovators, and
- Improve the competitiveness of our researchers nationally and internationally.

In terms of strategic research area alignment, the Digital Life Institute fits squarely in the following identified themes:

(1) Information & Communication Technology (ICT) and Informatics: The focus of the Institute will be on the current societal change resulting from new inventions and adaptation to technologies. The Canadian economy is driven by the flow of information. There is an overwhelming supply of technology-driven devices available in response to our increased demand for information. Research in the area of ICT has largely focused on advancing the technical capabilities of devices. Research activities at Digital Life Institute will strive to address a current gap in knowledge by examining the social and human impact of technological advancement, thereby positioning Ontario Tech to provide a holistic approach to ICT and Informatics education and research.

(2) Human Health and Community Wellness describes the need to create "[s]ustainable and healthy communities [which] are those that are capable of planned growth that maintains physical, social, economic, and environmental health, while promoting social justice and citizen

participation.” The Digital Life Institute will continue Dr. Pedersen’s examination of the various stages of human-technology interaction that occur before the release of a device to the general consumer. Research in this area provides insight into how we are conditioned to accept technologies prior to their public release. Research on immersive technologies from a societal, humanist perspective aligns well with this SRP theme as it can shed light on how the use of these devices can impact the well-being of individuals and society as a whole. The adoption of new technologies in every facet of life also raises issues of how to best protect the interests of vulnerable users, such as the youth and seniors, and who will bear responsibilities for protecting privacy, ensuring consent to collect and use personal information, and how the values of transparency and accountability will be incorporated into these future technologies, their social uses, and the business models that profit from them, all of which expands directly on the work of Dr Slane. Political discourse (Drs. Mirrlees, Douai, Stoett), crime prevention, control and understanding (Dr. Downing), and issues of public safety and social justice (Tokuhiko, Downing, Slane, Stoett, Hung, etc). all figure centrally into the theme of community wellness.

(3) Education for the 21st Century: Ontario Tech’s education researchers investigate the ways in which “learning and teaching can be reformed and improved through the use of digital technologies.” As evidence of the University’s leadership in this discipline, Dr. Janette Hughes was awarded the Canada Research Chair in Technology and Pedagogy in 2015 (currently under review for renewal for another five-year term 2020-2025). Dr. Hughes’s work addresses the evolution of the 21st-century workplace and investigates how to best prepare students and workers for the digital economy in an era in which disruptive technologies are transforming the nature of work. The SRP challenges our researchers to evaluate the impact of the evolving workplace “on the content and methods of creating relevant and effective learning experiences”; Dr. Hughes has taken on this challenge and is leading Ontario Tech to become a recognized authority in the field of technology and pedagogy.

Further, the mandate of the Digital Life Institute is broad, flexible and therefore nimble: we will be easily adaptable to a new Research Strategy, which we anticipate will soon be developed for Ontario Tech going forward.

ALTERNATIVES CONSIDERED:

N/A

CONSULTATION:

The Digital Life Institute proposal is the result of an extensive consultation process with internal and external stakeholders:

- *Vice President, Research, Innovation and International and the Canada Research Chairs (CRC) Program Secretariat:* CRC renewal project to establish the Digital Life Institute was first proposed to Michael Owen, VP Research, on August 4, 2016 and with his encouragement it was included in Dr. Pedersen’s CRC renewal application. Dr. Shahid Alvi SSH Associate Dean Research also gave permission to pursue the institute; Dr. Pedersen’s Canada Research Chair in Digital Life, Media and Culture was renewed for a second five-year term, which started Fall 2017.
- *Office of Research Services:* May 2016 – November 2019
- *Internal researchers:* Dean Stoett’s request, first discussed at SSH Faculty research retreat to form research cluster for Institute based on Digital Life Group on Jan 12, 2018
- *External researchers/partners:* Discussions Jan 2018-Jan 2020, three formal letters secured
- *All seven faculty Deans’ meeting:* October 17, 2018, six Deans in attendance; Deans’ Letters of Support collected
- *SSH Faculty council:* Motion passed October 22, 2019

- *Research Board*: Motion passed November 7, 2019

Through these consultations, over the last three years, the Digital Life Institute proposal has been honed, strengthened and revised to include a more focused vision and mission statement, as well as a specific and unique research mandate; an explanation of the value and necessity of the institute; concrete examples of research and knowledge mobilization activities; a five-year budget; a governance and membership structure; and a description of student training opportunities. Please find the full proposal amended to this document.

COMPLIANCE WITH POLICY/LEGISLATION:

The Digital Life Institute proposal was developed in conjunction with the Office of Research Services to align with the University's Procedure for the Creation of Research Units, Centres and Institutes (see Appendix 1).

NEXT STEPS:

Send proposal to the Board of Governors for approval.

MOTION FOR CONSIDERATION:

Motion: That Academic Council hereby recommends the establishment of the Digital Life Institute for approval by the Board of Governors, as presented.

SUPPORTING REFERENCE MATERIALS:

1. Summary of Procedures for the Establishment of Research Units, Centres and Institutes
2. Proposal for the Creation of the Digital Life Institute at Ontario Tech University
3. Governance Structure of the Digital Life Institute
4. Digital Life Institute Budget

PROCEDURES FOR THE CREATION OF RESEARCH ENTITIES

Classification number	LCG 1199.05
Framework category	Legal, Compliance and Governance
Approving authority	Academic Council
Policy owner	Vice-President, Research, Innovation and International
Approval date	June 2005
Review date	To be assigned

INTRODUCTION

1. A key mandate of UOIT is to advance the highest quality of research. To this end, UOIT welcomes and encourages the formation of research groups, units, centres and institutes. Not only will these research entities foster the highest standard of scholarly inquiry, they will also greatly enrich the educational environment for faculty, students and staff. It is also hoped that the ground-breaking research which UOIT envisions will better the lives of people locally, throughout the country and around the globe.

The purpose of this document is to establish clear procedures on the creation of research entities, to streamline the process, and to help ensure a level playing field for all involved.

DEFINITIONS

2. Centres are intended to strengthen, coordinate or facilitate scholarly purposes or activities not readily undertaken within the university's unit structures and are intended to offer new areas of activity consistent with the university's strategic direction and priorities. UOIT envisions four main types of research entities: research groups, research units, research centres and research institutes.
 - a. **Research Groups:** Research groups are the most informal type. They typically consist of three or more faculty in the same Faculty who are engaged in or want to pursue a common area of research. Research groups do not require an organizational structure, dedicated physical space on campus, or funding. Responsibility for funding of these groups rests with the host Faculty.
 - b. **Research Units:** Research units are slightly more formal in nature than research groups. They may include members from different Faculties at the university and have a broader research focus. These units are organizationally part of the university and are subject to university management and control,

reporting to a designated Dean or the Associate Provost, Research. Generally, they do not include researchers from other universities or organizations, but may have a small office or similar physical presence on campus. A Research Unit may be built around a Research Chair. ^{Agenda Item 13(a)}

- c. **Research Centres:** Research centres are more formal than research units and have a wider research mandate. They usually involve activities beyond the scope of a single Faculty and/or involve university resources. As well, they have an on-campus office or similar physical presence. Membership includes faculty from different Faculties and disciplines and, perhaps, small-scale partnerships with other universities, governments, non-profit organizations or businesses.
- d. **Research Institutes:** Research institutes are the largest and most formal of all research entities and conduct research into a number of related or different areas of study. They have a definite on-campus presence such as an office. Membership includes faculty from at least two UOIT Faculties, as well as significant involvement from other universities, governments, non-profit organizations and/or businesses. The title of a research institute may incorporate the name of an external partner that contributes significantly to the institute, likely through the provision of resources, equipment and/or funding. In such cases, the proposed name must comply with appropriate Board policies.

PROCEDURES

3. Term

Each research entity will be authorized to operate for a specific term. Research units, centres and institutes have an initial term of five years, which can be renewed. Research groups will normally be assigned an initial three-year term but are not subject to the more detailed operational requirements of other types of research entities.

4. Rationale

The planned research entity must have a clearly-defined rationale that demonstrates the uniqueness and need for the proposed research. The research must support UOIT's values and mission statement as well as enhance the university's standing in the academic and external communities.

5. Research Objectives and Activities

The research objectives and scope must be consistent with the type of research entity being proposed and adhere to the university's Research Guidelines. As well, the proposed research must clearly enhance or challenge the current body of knowledge in the proposed area(s) of inquiry or, if applicable, break new ground. A research entity will not engage in academic activities such as offering academic programs or granting degrees.

All research entities are encouraged to sponsor and organize lectures, workshops, symposia and conferences. As well, research entities must conform to all university policies and procedures.

6. Membership

Normally, a majority of the members of any of the four research entities must be current UOIT core faculty. Members must be in good standing with the university, have a track record of successful research, and pledge that their participation in a research entity will not prevent them from fulfilling their teaching responsibilities. The possibility of teaching release time must be discussed with the appropriate dean.

7. **Benefits to UOIT**

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A key consideration in approving a research entity is the benefits it will bring to UOIT. These benefits must exceed providing a service to the university community and comprise a level of research that could otherwise not take place. The research must also enhance UOIT's reputation as well as help position the university as an attractive employer to prospective faculty and staff.

8. **Structure and Governance**

As the most informal of the four categories, research groups may choose to appoint a leader who would keep the respective dean informed of the group's activities. Research units have a head administrator or a director, and centres and institutes have a director. The head administrator or director keeps the respective dean(s) apprised at regular intervals of the entity's activities, as well as through formal means outlined in Section 11 of this document.

Each research entity must have clearly-defined lines of accountability to one or more Deans and/or the Associate Provost, Research.

Research units, centres and institutes will hold a competition to select the head administrator or director, with the search panel comprising the dean(s) of the Faculty or Faculties associated with the entity, the Associate Provost, Research and the Provost (or delegate). The term of office of the head administrator or director should normally be five years. On a continuing basis, the head administrator or director will keep the relevant dean(s) informed of the research entity's main activities and challenges. Annual reporting and the periodic review are discussed in sections 11 and 12 of this document.

According to the UOIT Act, the university's Board of Governors has the ultimate authority for the creation and closure of all UOIT research units, centres and institutes.

9. **Proposal**

Faculty members interested in organizing a research unit, centre or institute must submit to the dean(s) of the Faculty or Faculties to which they are appointed a proposal outlining the planned research entity. For a full list of proposal criteria, please see Appendix I. The preferred length of the proposal is three pages.

The sponsoring dean(s) will then submit the proposal to the Research Board which, in turn, will be responsible for advising Academic Council and the Board of Governors on the establishment of the research entity.

Until final approval is granted, the proposed research entity may not use its name in any official capacity (letterhead, signage, etc.). If there is involvement from external parties such as other universities, organizations or businesses, the proposal must also be approved by all outside groups before the entity can be created.

10. **Financial Operation**

For the benefit of UOIT researchers and the university itself, the entity must be financially self sufficient and sustainable in the long-term. The sources of funding outlined in the proposal must be sufficient for at least the first five years of operation. Each entity shall be responsible for obtaining sufficient revenue from

grants, contracts, indirect costs or other means to offset its direct costs of operation. Research entities shall normally carry forward any year-over-year financial surpluses or losses.

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Under no circumstances is a research entity to incur debt or operate a deficit. If a research entity's financial situation becomes precarious, the head administrator or director is to immediately notify the respective dean(s), who will alert the Associate Provost, Research and the Provost. Depending on the circumstances, these individuals may recommend that a review of its ongoing viability be undertaken and that the entity be put on probation or be closed. In all reasonable circumstances, the university will work with the entity and its members to help solve financial difficulties.

11. **Annual Report**

Research units, centres and institutes are required to submit a written report each year for the period ending March 31 to the respective dean(s), with copies to the Associate Provost, Research and the Provost, by April 30. The report, which should not exceed five pages, will document the activities and accomplishments of the past year including the amount of external funding, its impact on the university and all partnering organizations, and any changes in membership. As well, the report must include a financial statement (including sources of funds and expenditures), and a summary of planned activities and research for the next year. If a research entity does not submit its annual report within 30 days of the deadline, further action such as probation or closure may result.

12. **Periodic Review**

Each research unit, centre and institute will undergo a thorough review at the end of each five-year term. The review team will consist of the respective dean(s), the Associate Provost, Research, the Provost (or delegate) and one or two outside assessors knowledgeable in the field. The review will examine the entity's operations, accomplishments, success, membership, finances and plans for future research. Upon completion of the review, the review team will recommend to Academic Council and the Board of Governors one of three courses of action: renewal, probation or closure. If probation or closure is recommended, the entity will have 60 days within which to respond before the recommendation is confirmed.

13. **Closure**

A recommendation for closure would only result in certain circumstances. Failure to submit an annual report (even after the 30-day "grace period" has elapsed), submission of an unsatisfactory annual report, failure to pass the periodic review, or any circumstance that could adversely affect the university in any way, may result in closure. As well, a majority of a research entity's members may recommend closure, having found that the entity has met its research goals and no further research is planned. If closure is recommended, the entity will have at least three months from the date of the recommendation to wind down its affairs.

14. **Contact Information**

The office of the Associate Provost, Research is responsible for maintaining a complete list of research groups, centres and institutes, their campus locations and contact information, the name and contact of the head administrators and directors, and the names and contact information for all members.

APPENDIX 1 - PROPOSAL CHECKLIST

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15. The suggested maximum length of the proposal is three pages (excluding budget, letters of support, faculty CVs, etc.). To expedite the review of proposals, faculty members should ensure that their documents contain the following information:
 - 15.1 **Proposers**
Give the names of the proposing faculty, their titles and contact information.
 - 15.2 **Faculties**
Specify the Faculties involved.
 - 15.3 **Title**
State the proposed name of the planned research entity.
 - 15.4 **Description and Justification**
Name the type of entity^{3/4}research unit, centre or institute. Explain why is it needed at UOIT and, if possible, by the larger community.
 - 15.5 **Research Mandate**
Outline the type of research to be performed.
 - 15.6 **Management**
State if the entity is to be led by a Head Administrator or Director (research units) or Director (research centres and institutes) and outline the position's responsibilities.
 - 15.7 **Proposed Members**
This should include the names of proposed members as well as their Faculty or Faculties, contact information and an abbreviated curriculum vitae for each (degrees, employment history, professional memberships, research activities and interests, research funding record for the past five years, and a summary of their publication record).
 - 15.8 **External Involvement**
Give details about any expected outside partners such as researchers from other universities as well as governments, organizations and businesses. State the name, address and contact information for each organization involved; the key people to participate in the research entity as well as their titles and contact information; and how their involvement will benefit the research entity. Include copies of agreements or memoranda of understanding with all outside parties.
 - 15.9 **Facilities**
Explain the type, size and location of space desired, and how the desired space will fill the proposed research entity's needs. Specific space commitments must be secured from the office of the Provost. Mention all special equipment or other requirements that have space implications.
 - 15.10 **Resources and Equipment**
Provide a complete list of all required resources and equipment, including computers, phones, copiers and fax machines. Specify what internal resources (i.e. library, audiovisual) will be used and to what extent.
 - 15.11 **Budget**
Prepare a detailed budget projection for the first five years, including all sources of income and expected expenses and disbursements.
 - 15.12 **Letters of Support**
Include all letters of support from dean(s) and external partners.



Proposal for the Creation of the Digital Life Institute at Ontario Tech University

October 25, 2019

1.1 Name of the Institute

Digital Life Institute

1.2 Proposers

Director:

Isabel Pedersen, PhD

Canada Research Chair in Digital Life, Media, and Culture

Director of *Decimal: Digital Culture and Media Lab*

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Steering Committee:

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Akira Tokuhiko, PhD

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Bill Kapralos, PhD

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Faculty of Business and Information Technology

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1.3 Background Description and Justification

1.3.1 Short Description

The Digital Life Institute will integrate a trans-disciplinary community of researchers interested in examining the human and social dimensions of current and projected digital technologies, with the overarching goal of advancing our understanding of their human impact. The Digital Life Institute will be a hub for the critical analysis of digital technologies and will build upon an extant community of interdisciplinary scholars interested in the social implications of disruptive technological advancement. It will position the social and ethical analysis of technology at the forefront of Ontario Tech University's role as a leader advancing the research mandate of "technology with a conscience" within the context of national and international research spheres.

1.3.2 Need for Digital Life Research

Disruptive technology is changing how people live, in vastly different ways. Even in global innovation and marketing spheres, digital life technology is clearly a controversial concept highlighting issues of privacy, security, identity, human dignity, quality of social connection, and cultural values. The emerging notion of a thoroughly quantified, observable, and perpetually mediated self will be transformative in myriad ways, propelling discussions of personal privacy, human agency, creativity, consent, education, and appropriate legal and ethical modes of protection and guidance in these new tech-infused futures. Digital technologies will continue to evolve in ways that impact social structure, culture, law and governance, politics and political economy, business, and education. The Digital Life Institute will fill this knowledge gap by integrating a community of trans-disciplinary scholars and researchers with the goal of reaching a more holistic understanding of the impact of technology on humans and society.

Digital Life research does not have a large, dedicated research home in Canada. Similarly focused large scale research centres in the United States include the MIT Media Lab (<https://www.media.mit.edu/>), and Data & Society in New York City, which is a not-for-profit organization that grew out of New York University (NYU), which is now composed of several university, civil society, and business entities (<https://datasociety.net/>). Complementary research centres in Canada with which the Digital Life Institute could potentially form partnerships include the Centre for Law, Technology and Society at the University of Ottawa (<https://techlaw.uottawa.ca/>) and the Inclusive Design Institute at the University of Toronto (<https://inclusivedesign.ca/>). The Digital Life Institute could also serve as a hub for the social and cultural analysis that will surely form a central aspect of the new partnership between Ontario Tech and OCADU going forward, given that Drs. Pedersen, Slane and Takuhiro have already been involved in the first collaborative project between our institutions on the Digital Human Connection.

1.3.4 History of Digital Life Research at Ontario Tech and Justification for Digital Life Institute

The Digital Life Institute is a logical extension of infrastructure and resources currently dedicated to Digital Life research at Ontario Tech. The flourishing of digital life research will be appreciated through banding together existing entities under the umbrella of the Digital Life Institute: including the Digital Life Research Group, Decimal Lab, STEAM 3D Maker Lab, the Laboratory for Games and Media Entertainment Research (GaMER Lab), Human Machine Lab, and Sigma Lab.

Digital Life Research Group

The kernel of the idea for the Digital Life Institute began with the formation of the Digital Life Research Group in the Faculty of Social Science and Humanities in 2010 by a cohort of faculty members from diverse disciplines including communication and digital media studies, legal studies, criminology, and political science. (<http://socialscienceandhumanities.uoit.ca/research/digital-life-research-group.php>) The Group has met regularly to host speakers and engage in a lively dialogue on a range of relevant issues, including cybercrime, romance fraud, and online dating, but it has not reached its full potential as it has largely depended upon the more informal association of the faculty members and their connections to speakers who were coming to Toronto or Oshawa for other events. The Digital Life Research Group has never pursued any funding, from either the university or outside sources. Its longevity is, however, a testament to the enduring interests of the faculty members affiliated with it and their ongoing collegiality, several of whom have been in the Group since its inception (Andrea Slane, Steven Downing, Aziz Douai) or since they arrived at the university (Isabel Pedersen, Tanner Mirrlees, Gary Genosko). Other faculty members, mostly from FSSH but also sometimes FBIT and FEd attend Digital Life Research Group forums, depending on the topic. The Group of dedicated core members work well together and share keen common interest in the social and cultural analysis of digital technologies, and will continue to serve as leaders in the Digital Life Institute.

Decimal Lab

Dr. Isabel Pedersen, Canada Research Chair in Digital Life, Media, and Culture, established Decimal Lab, which involved designing a research hub and hybrid public media arts space, which has operated at the downtown Oshawa campus since 2013 (<https://www.decimallab.ca/>). Decimal Lab is a showpiece for the university; it is a large, glassed-in research space that supports creative work and traditional research, made possible with 2013 CFI/MRI funding (\$104,000). This downtown Oshawa lab is a hub that draws together key collaborators, including researchers from across the university and from external institutions to collaborate on digital life projects.

Dr. Pedersen has built a career on human-computer interaction studies to inform digital life practices. She has been invited to speak at twenty-four significant international, national and local events, signaling her recognized expertise addressing audiences about the impact of the turn to digital life. Events include keynote or plenary talks at IEEE International Symposium on Technology and Society, Global Affairs Canada AI Symposium, IFA Summit Berlin, Munk School of Global Affairs and Public Policy, the International Wearables Technologies Conference (Munich), The International Council on Education for Teaching (ICET) World Assembly, the Canadian Association of Journalists Annual Conference, and local events, TEDx, Spur Festival, Subtle Technologies, and Mesh Toronto.

After the second term renewal of her CRC (Sept. 2017- Aug 2022), Ontario Tech's Digital Life research infrastructure underwent a further phase of expansion. Decimal Lab research partnerships are now focusing on provincial, national, and international teams to gain funding, tighten networks, and meet more ambitious goals for publications. Office and event space related to Decimal Lab has now also been established within the lively Centre for Social Innovation (CSI) in Toronto, providing vital access to Toronto publics, stakeholders, and potential partners.

Fabric of Digital Life ('Fabric'), is an open, CollectiveAccess research database launched in 2013 and funded by CFI, CRC and SSHRC Insight grants held by Dr. Pedersen. Fabric facilitates web-based, cultural analytic research on the digital enhancements of human capabilities, especially regarding wearable, ingestible, implanted, and robotical technologies. It tracks the impact of artificial intelligence on embodied computing. It has informed social science, humanities and digital humanities research outputs over the past six years. Its digital assets include its public frontend interface at <http://fabricofdigitallife.com>, as well as a contributor's interface, and an extensive 'backend' working system to manage its customized metadata, so that researchers can contribute to it simultaneously from remote locations. Working closely with partners such as the *Canadian Science and Tech Museum (Ingenium)*, *Temple University*, *University of Minnesota*, and *Trent University*, Dr. Pedersen has built its core research holdings and meta-data customization in order to accumulate further partnership to build the research. Its external network has produced collections from researchers from *University of Melbourne*, *City University of New York*, *University of Alberta*, and *University of Quebec*.

Several prototypes for the Decimal Digital Museum Project have been developed through collaborations between SSH and FBIT. TombSeer evolves museum experiences using gestural and visual augmented reality. It offers a visually augmented environment to allow a museum visitor to view artefacts from new perspectives. Its first iteration augmented the Tomb of Kitines replica at the Royal Ontario Museum in Toronto. *iMind* uses brain-computer interaction for viewing collections of digitized paintings.

Dr. Pedersen has secured several international partnerships for Decimal Lab, which work on research output, grants procurement, and knowledge mobilization. The *Digital Literacy project* is a recent partnership between the University of Minnesota's Dr. Ann Hill Duin and her Emerging Technology Research Collaboratory (ETRC, <https://etrc.umn.edu/>), Texas Tech University's UX Research Lab, and Decimal Lab at Ontario Tech U. Another related partnership is The *Human-*

centered AR Design project for augmented reality, a multi-year research project involving both Canadian and American researchers. It involves multidisciplinary research studying augmented reality user adoption from a sociotechnical, media studies vantage, as well as research for augmented reality design and content creation from technical and professional communication, curriculum-building perspectives. Dr. Ann Hill Duin (Professor, Writing Studies, University of Minnesota), Dr. Dawn Armfield (Minnesota State University, Mankato) and Dr. Pedersen work as a team along with senior American PhD students.

Strong research partnerships have been established between Ryerson University and OCADU, following a SSHRC Insight grant held by Dr. Pedersen (PI), along with Kate Hartman (Co-PI, OCADU) and R. Bruce Elder (Co-PI, RyersonU). Dr. Pedersen hosted and organized *Wear Me: Art | Technology | Body*, a major research knowledge mobilization event on 24–25 September 2016. It involved four parts: an art exhibit at Whitby Station Gallery (with 8 artists including Kate Hartman), an academic symposium, a graduate student conference, and a keynote talk with featured artist Tom Sherman (Governor General's award winner) at Regent Theatre.

Dr. Andrea Slane is currently leading a project in collaboration with Drs. Pedersen and Hung entitled “Involving Seniors and Caregivers in Developing Privacy Best Practices: Toward Responsible Development of Social Support Technologies for Seniors”. The project is funded by the Office of the Privacy Commissioner of Canada (OPC), and will contribute content to the Fabric collection on social support technologies, mainly robots, that are being marketed for use by seniors in their homes. This project is conceived as the initiation of a longer term research agenda, examining the social, ethical and legal practices for shaping and governing technologies that aim to alleviate especially social isolation and loneliness among the elderly. Dr. Pedersen and Decimal Lab provided student research support to the grant writing process for this project, and the OPC grant is contributing funding toward the staff project coordinator for Fabric.

Dr. Pedersen and Decimal Lab have also supported students, studies, partners and grant applications for Dr. Steven Downing, Associate Professor in the Faculty of Social Science and Humanities at Ontario Tech University. He has applied theories of crime to online and offline settings, where he qualitatively examines subcultural and social control constructs surrounding deviant and criminal behaviour, and more recently has conducted several studies examining relationships between (new) media and culture more broadly. His research considers the technology-culture nexus, examining, for example, digital representations of crime and deviance, uses of emerging technologies such as VR and AR to study traditional criminological and sociological questions, and representations of race and gender in gaming, television, and film. Dr. Downing's research has appeared in journals across disciplines, including *Deviant Behavior*, *Games and Culture*, and *Contemporary Justice Review*. One of Dr. Downing's recent co-authored pieces, “Pains of imprisonment in a “lock em’ up” video game: exploring peacemaking discourse through gaming,” considers how prison themed video games can present interactive experiences with the potential to portray and problematize pains of imprisonment, and how these portrayals may prompt a public discourse surrounding prison, particularly from a peacemaking perspective.

Dr. Pedersen has received excellent funding support from Ontario Tech U, the Faculty of Social Science and Humanities, and external funders, including especially Tri-council Funding. As Principal Investigator and co-applicant, her total is \$2,433,700. Her *Canada Research Chair in Digital Life, Media, and Culture*, spans 2012-2022. She has used CFI and MRI funds to support Decimal Lab. She was P.I. on a SSHRC Insight Grant, 2014-2017, and a SSHRC Standard Research Grant, 2010-2013. She has been Co-PI on numerous grants including: (1) *Digital Culture and Quantified Aging* – Marshall, Barbara. (P.I.) Trent U, Stephen Katz (Co-Applicant) Trent U, Isabel Pedersen (Co-Applicant) UOIT, and Wendy Martin Brunei U, SSHRC Insight Grant, 2017-2022. (2) *Accelerating Digital Technology Adoption in Canadian Companies* – O. Ngwenyama, O. (P.I.) (Ryerson U) and W. Cukier, SSHRC Partnership Development Grant, 2014-2016, and (3) *Accessible Entertainment: Making Film, Television and Theatre More Inclusive*, Deborah Fels (P.I.) (RyersonU), SSHRC Community-University Research Alliance, 2007-2012. Dr. Pedersen has trained more than 100 HQP, including students from Ryerson University, Trent University, Calgary University, University of Toronto, and OCADU.

STEAM 3D Maker Lab

Dr. Janette Hughes joined the Faculty of Education at Ontario Tech in 2006. She was appointed Canada Research Chair in Technology and Pedagogy in 2015. Dr. Hughes established the STEAM 3D Maker Lab in 2016, with support from a CFI-JELF grant and matching MRIS infrastructure grant, and this research space has enabled her to carry out cutting-edge research in the field of technology and pedagogy. Her Maker Lab is equipped with state-of-the-art digital technologies such as 3D printers, a CNC router, programmable robots, virtual and augmented reality, artificial intelligence bots, and a wide variety of coding tools such as MicroBits, Arduino, and LilyPad microcontrollers for work with e-textiles. This innovative learning space is used regularly by her research team, as they work with students, parents, school administrators, and preservice and in-service teachers in K-12 education. Over the past 3.5 years, she has worked with more than 2400 student research participants and over 450 in-service and pre-service teachers, in 22 different schools.

In addition to the various school districts Dr. Hughes has partnered with across Ontario, she has collaborations with industry partners (GM of Canada, Dell EMC Canada, InkSmith, Invivo, LearnStyle and Pearson Canada) and community partners (Literacy Network of Durham, John Howard Society, The LivingRoom Community Art Studio, Grandview Children's Centre and several municipal libraries). Dr. Hughes has been invited to deliver 25 keynote/panel addresses to diverse audiences, including for organizations such as the Ontario Council for Technology Education (OCTE), Canadian Institute for Digital Literacies Learning, Science Teachers' Association Ontario (STAO), Catholic Principals' Council of Ontario, York Catholic Administrators' Association, Ontario Principals' Council (OPC), and the Ontario Ministry of Education.

In Canada, she has forged research partnerships with colleagues at Memorial University, Lakehead University, University of Calgary, University of British Columbia, Queen's University and the University of Ottawa. Internationally, she has partnerships with colleagues in Australia,

Brazil, Denmark, Finland, Ireland and Japan, in addition to her partners involved in an Organisation for Economic Cooperation and Development (OECD) initiative which focuses on “Fostering and Assessing Creative and Critical Thinking Skills”, and involves 16 higher education institutions across 12 countries. Dr. Hughes is one of the lead researchers in Canada on this project and was one of only five researchers from 28 countries to present her research at the inaugural meeting of the group in Paris in September 2018.

Dr. Hughes has an exceptional level of grant funding over the past three years. She received a Social Sciences and Humanities Research Council of Canada (SSHRC) Insight Grant as PI (2017-2021), an Ontario Research Fund – Research Excellence Award as PI (2016-2021), an Ontario Ministry of Education Grant (2016-2019), a SSHRC Partnership Development Grant as co-I (2015-2018), and a SSHRC Insight Grant as Co-I (2016-2019). She has collaborated with researchers across Canada as well as internationally, building a solid and recognizable program of research in those contexts, and working with colleagues in a variety of fields. Prior to her tenure as a CRC, Dr. Hughes also received a SSHRC Insight Grant (2012-2015), the MRIS Early Researcher Award (2011-2014), a SSHRC Public Dissemination Grant (2012-2013), and a SSHRC Standard Grant (2007-2010). All of the funding awarded to Dr. Hughes to date has provided her with the means to establish a research team that is developing the capacity to make contributions to Canada and abroad in critical digital literacies, an area that advances Ontario Tech’s investment in innovative uses of digital technologies for learning, and aligns closely with SSHRC’s “Digital Economy” priority area.

In recognition of commitment to teaching and mentorship, particularly of graduate students, Dr. Hughes was the 2016 recipient of the UOIT Teaching Excellence Award. She is a highly sought-after supervisor for students in the graduate program at Ontario Tech University and beyond, and was nominated for the inaugural Award of Excellence in Graduate Supervision at Ontario Tech in 2018. She is currently supervising five Master’s level graduate students and is on the supervisory committee of another Master’s student in the Faculty of Health Sciences. She is also co-supervising a PhD student from Brazil, who is a visiting scholar at Ontario Tech University. Since becoming a CRC, Dr. Hughes has supervised 18 undergraduate students (all completed), 8 Master’s students (4 completed) and co-supervised 3 PhD students from other institutions (2 completed). UOIT’s Faculty of Education does not have a PhD program, but she has Adjunct status at the University of Calgary. They have benefitted immensely from being involved in all aspects of the research process and from attending local, national and international conferences. Her graduate students have also developed important networks through the work they have done in her research lab and in the schools and organizations they have visited with her.

Laboratory for Games and Media Entertainment Research (GaMER Lab)

Dr. Kapralos is one of the key faculty members to have established the Games and Media Entertainment Research Lab (GAMER Lab), a state-of-the-art, interdisciplinary research laboratory where faculty and students (graduate and undergraduate alike) conduct research related to serious games, human factors, simulation, games for fitness and health, applied game design,

augmented reality, stereo-vision gaming, and affective computing. The GAMER Lab is equipped with a variety of state-of-the-art equipment including stereoscopic displays, physiological monitoring equipment, tabletop computer, high-fidelity audio equipment, various input devices, amongst others. In addition to this research space, specific to the Game Development and Entrepreneurship program is the Undergraduate Game Development Laboratory (UGDL) which Kapralos helped establish and currently maintains. The UGDL consists of state-of-the-art game development software and equipment to enable the development of video games from a variety of perspectives. It contains a full-body motion capture system to be used for ground-truth millimeter accurate estimation of joint postures. It houses 15 graphics/gaming workstations, an audio-recording chamber (audiometric room), high-end audio recording equipment, and the latest motion controller technology for evaluation such as Sony's Move Controller, Nintendo's Wii, and Microsoft Kinect. Software installed on the workstations ranges from software development environments to 3D modeling packages (Autodesk Maya) for the creation of digital assets to be manipulated in-game. A variety of display technologies are available for testing user experiences in stereoscopic 3D that employ active or passive 3D displays.

Human Machine Lab

The Human Machine Lab is an interdisciplinary research laboratory focused on designing computer systems around human needs and capabilities while maintaining human-level intelligence. Dr. Hung is a primary faculty lead in this lab, and the technical aspects of the project with Drs. Slane and Pedersen on social support technologies for seniors has been housed in this lab. This collaboration builds on Dr. Hung's work developing a privacy protection framework for companion robots and smart toys. A companion (social) robot is a device consisting of a physical humanoid robot component that connects through a network infrastructure to web services that enhance traditional robot functionality. The objective of this research is to build a theoretical and technical data privacy protection engine for culture-aware robots and smart toys on enabling users to be in control of their privacy by specifying their privacy preferences in human-robot interaction (HRI). Overall the Human Machine Lab's interdisciplinary projects fall in various fields including human-computer interaction, usable security, privacy, and artificial intelligence.

FESNS Sigma Lab

Dr. Tokuhiro as FESNS Dean has started the Sigma Lab in ERC. The Lab is led by a TF (S. Perera) and two technical support staff (C. Brown, R. Ulrich). The primary goal of the Lab is to provide experiential (technical project) learning for FESNS students. The projects are focused on industry needs. As digital tools such as VR equipment and haptic feedback devices become accessible, industry relevant projects using digital tools are emerging as a major activity in the Lab. Further, with advances in computing and software, simulation systems mimicking functions of a nuclear reactors (Canadian CANDU type) are becoming more interactive. These developments point to FESNS interest in digital technology applications in industrial settings and environments. Recent capstone projects include VR environments of inside and outside a generic nuclear plant

and dispersal of radiation sources under hypothetical scenarios. Participation from FBIT's Dr. Uribe Quevedo and FBIT students in developing a gaming overlay was realized.

1.3.5 Need for the Institute

Given the strategic priority of broadening and intensifying Ontario Tech's research agenda under the broader theme of "technology with a conscience", the various entities that will be housed under the umbrella of the Digital Life Institute will benefit from the efficiencies and strengths that joining together brings. In particular, the Digital Life Institute aims to support collaborations and partnerships in the following ways:

- Infrastructure: Leveraging grants and donations to support a project coordinator position; shared position of technician maintaining archive and other project based technologies; shared technologies for research projects (e.g. robots, sensors, wearable devices)
- Space: Facilitate use of existing lab space for collaborative projects; aim to support establishment of new Living and Learning Lab space, which could be used by faculty across all of Ontario Tech;
- Networking: Provide a hub for incubating new project ideas;
- Partnerships: Provide a broader central entity with which organizations and donors could more easily see themselves affiliated;
- Students: Provide a hub for graduate students both within and outside of FSSH, FEd, FBIT and FESNS to work with faculty in social science and humanities disciplines, and to interact with other students across disciplines interested in Digital Life research. This could include supporting the Ontario Tech-OCADU partnership, which similarly aims to bring together engineering students with artists and designers, with the aim of improving the sophistication and sensitivity of the process of technology development.

An Institute will better serve its research partners by providing a permanent platform for coordination, and will serve as a magnet for others working in the field within the GTA and beyond. Importantly, The Digital Life Institute will further enhance the credibility of its existing networks and lend greater support for Ontario Tech University researchers, including those who currently do not have proper affiliation with graduate programs or a pool of graduate trainees. It will empower international teams seeking funding, formalize extant research partnerships across Ontario Tech Faculties, and facilitate formal relationships with national and international partners, for instance by lending Digital Life expertise to the existing partnership between Ontario Tech University and Shizuoka University in Japan, in which Drs. Kapralos, Hung, and Uribe Quevedo (FBIT) are already central.

1.4: Research Mandate

1.4.1. Type of Research

The Digital Life Institute will bring together a trans-disciplinary community of researchers interested in examining the human and social dimensions of current and projected digital technologies, with the overarching goal of advancing our understanding of their human impact. The Digital Life Institute will be a hub for the critical analysis of digital technologies and will build upon an extant community of interdisciplinary scholars interested in the social implications of disruptive technological advancement, from philosophical, empirical, and theoretical perspectives, supporting production of new knowledge, new means of mobilizing that knowledge, and new applications of that knowledge. It will bring the social and ethical analysis of technology to the forefront, positioning Ontario Tech University as a leader, advancing the research mandate of “technology with a conscience.” The Institute will concentrate on *digital life* as a social and cultural turn, with specific focus on: (1) human subjectivity, bodies, agency, experiences, perceptions, and identities; (2) technological disruption, emergence, innovation, future plans, policies, practices, and the intended/unintended consequences and possibilities that result from these developments.

Goals

- To become a globally recognized hub for theoretical and applied social science and humanities research in human life lived with and through digital technology, thus expanding the breadth and depth of Digital Life scholarship.
- To stimulate productive engagement between social scientists, humanists, engineers, computer scientists, policy makers and the public to critically assess the impact of technological advancement on society.

The deliberately broad research mission of the Digital Life Institute is designed to advance our understanding of digital life. Methodologies are drawn from humanities and social science perspectives, in dialogue with both technology development, applications, and artistic practice. The Digital Life Institute will become a lively venue for debates, argumentation, discussion and design within domains key to human thriving, such as ethics, democracy, subjectivity, education, and social justice. Issues to be addressed include human agency, culture, power and control, equity, identity, creativity, and governance. The philosophical scope includes transhumanism & posthumanism, humanities fields long associated with artificial Intelligence (AI) and other human capability enhancement technologies.

The Digital Life Institute will provide a base from which to integrate researchers and labs from across the university, including Digital Life Research Group, Decimal Lab, STEAM 3D Maker Lab, the GaMER Lab, Human Machine Lab and Sigma Lab. The Digital Life Institute will further serve as a base for enhancing existing partnerships and forging new ones with national and international research centres and labs engaging in human-centered research on digital technologies. The Digital Life Institute will stimulate interaction among scholars through research collaborations, knowledge mobilization events (symposia, conferences, speaker series), and work-in-progress supports (idea jams, co-design and maker workshops, work-in-progress workshops).

The institute plans to host visiting scholars and post-doctoral fellows, and to facilitate the interdisciplinary training of new Digital Life scholars by providing access to networks, archives, equipment and collaborative opportunities in one centralized physical and virtual space.

1.4.2: Alignment with Ontario Tech University’s Strategic Research Plan

The Digital Life Institute initiative has already established a long history of institutional support from Ontario Tech, insofar as it was a central project proposed for Dr. Pedersen’s successful Tier 2 CRC renewal in Digital Life, Media and Culture, which was vetted by the Canada Research Chairs program. The CRC vetting included several blind reviewers who were extremely positive of this phase of growth for Ontario Tech University. This proposal has been developed in consultation with the President, Deans of all of the Faculties at Ontario Tech University, the Provost, the Vice-President Research and the Office of Research Services.

In addition to aligning closely with Ontario Tech University’s overall theme of “technology with a conscience”, the Digital Life Institute aligns with the general goals of the research plan as well as enhancing the specific areas of research strength set out in the Strategic Research Plan. Namely, the Digital Life Institute, like Ontario Tech as a whole, seeks to:

- Build effective and sustainable partnerships with our academic and scientific collaborators, and with industry and community-based agencies and organizations.
- Enable our researchers to become global leaders and innovators.
- Improve the competitiveness of our researchers nationally and internationally.

In terms of specific broad subject areas, the Digital Life Institute fits squarely in the following identified themes:

(1) Information & Communication Technology (ICT) and Informatics: The focus of the Institute will be on the current societal change resulting from new inventions and adaptation to technologies. The Canadian economy is driven by the flow of information. There is an overwhelming supply of technology-driven devices available in response to our increased demand for information. Research in the area of ICT has largely focused on advancing the technical capabilities of devices. Research activities at Digital Life Institute will strive to address a current gap in knowledge by examining the social and human impact of technological advancement, thereby positioning Ontario Tech to provide a holistic approach to ICT and Informatics education and research.

(2) Human Health and Community Wellness describes the need to create “[s]ustainable and healthy communities [which] are those that are capable of planned growth that maintains physical, social, economic, and environmental health, while promoting social justice and citizen

participation.” The Digital Life Institute will continue Dr. Pedersen’s examination of the various stages of human-technology interaction that occur *before* the release of a device to the general consumer. Research in this area provides insight into how we are conditioned to accept technologies prior to their public release. Research on immersive technologies from a societal, humanist perspective aligns well with this SRP theme as it can shed light on how the use of these devices can impact the well-being of individuals and society as a whole. The adoption of new technologies in every facet of life also raises issues of how to best protect the interests of vulnerable users, such as the youth and seniors, and who will bear responsibilities for protecting privacy, ensuring consent to collect and use personal information, and how the values of transparency and accountability will be incorporated into these future technologies, their social uses, and the business models that profit from them, all of which expands directly on the work of Dr Slane. Political discourse (Drs. Mirrlees, Douai, Stoett), crime prevention, control and understanding (Dr. Downing), and issues of public safety and social justice (Tokuhiko, Downing, Slane, Stoett, Hung, etc). all figure centrally into the theme of community wellness.

(3) **Education for the 21st Century:** Ontario Tech’s education researchers investigate the ways in which “learning and teaching can be reformed and improved through the use of digital technologies.” As evidence of the University’s leadership in this discipline, Dr. Janette Hughes was awarded the Canada Research Chair in Technology and Pedagogy in 2015. Her work excels in the priority goal to study “the integration of learning and teaching across the life-span in the digital economy.”

Further, the mandate of the Digital Life Institute is broad, flexible and therefore nimble: we will be easily adaptable to a new Research Strategy which we anticipate will soon be developed for Ontario Tech going forward.

1.4.3. Internal Researchers and Faculties

As noted above, the Digital Life Institute grows out of existing faculty research strengths and interests, that have been leading to both formal and informal research collaborations for at least a decade, as reflected in the membership of the Institute (CVs attached):

- Dr. Aziz Douai – Communication and Digital Media Studies, FSSH – social media, digital media, political publics;
- Dr. Steven Downing – Criminology, FSSH – crime within online gaming; use of VR to study criminal behavior; cybercrime;
- Dr. Gary Genosko -- – Communication and Digital Media Studies, FSSH – theory and philosophy of machine thinking;
- Dr. Janette Hughes – Faculty of Education – digital literacies; educational uses of digital technologies, in both K-12 and teacher education;
- Dr. Patrick Hung – Networking and Information Security, FBIT – privacy and robots

- Dr. Bill Kapralos – Game Development and Entrepreneurship, FBIT -- VR/AR; serious games, acoustical modeling, and multimodal interactions;
- Dr. Tanner Mirrlees -- Communication and Digital Media Studies, FSSH – political economy of digital entertainment industry; connection between gaming, science fiction, and the military;
- Dr Isabel Pedersen – CRC in Digital Life, Media, and Culture, FSSH – AI ethics, embodied computing and human subjectivity;
- Dr. Andrea Slane – Legal Studies, FSSH – law and digital technology; privacy and data protection; cyberbullying; obligations to protect and empower vulnerable users;
- Dr. Peter Stoett – Dean, FSSH – sustainability and human rights issues associated with AI;
- Dr. Akira Tokuhiko – Dean, FNSES – data analytics, energy systems, public safety
- Dr. Alvaro Uribe Quevedo – Game Development and Entrepreneurship, FBIT – design and use of VR and 3D user interfaces towards creating interactive and meaningful experiences, including in health care in the form of exer-games and serious games.

This group of faculty members have been in formal and informal collaboration, and are eager to build an institute where more formalized collaboration is consistently supported and encouraged.

The Digital Life Institute will connect several currently siloed research groups and labs to bring together trans-disciplinary groups of scholars to foster dialogue, inquiry and analysis into social and human perspectives of rapid technological advancement. The Digital Life Institute will further be bolstered by the experience of Steering Committee members Drs. Stoett (Dean) and Slane (Associate Dean, Research) at FSSH, who both have experience either establishing or running a research institute at other universities. Namely, Dr Stoett established and directed the Loyola Sustainability Research Centre at Concordia University, and Dr. Slane was Executive Director of the Centre for Innovation Law and Policy at the University of Toronto, Faculty of Law.

1.4.4 External Partners and Members

Plans for the Digital Life Research Institute include fostering partnerships with external organizations, who will help form the foundation for Digital Life Institute, and in some cases, provide leadership. This process will require communication between external partners and Ontario Tech University at the Decanal and Executive levels.

Partnerships under discussion or already in the works include:

Dr Ann Hill Duin, University of Minnesota, Wearables Research Collaboratory (<https://etrc.umn.edu/> - letter of support attached);

Dr. Andrew Iliadis, Director of the Critical Data Lab, Temple University, Klein College of Media and Communication (<https://klein.temple.edu/>);

Dr. Kamen Kanev, Shizuoka University Hamamatsu (Japan), Research Institute of Electronics (<https://www.shizuoka.ac.jp/english/subject/labo/rie/>); – MOU has been signed between the two schools

Further discussions have been initiated with the following possible partners: Trent University, Centre for Aging and Society (<https://www.trentu.ca/aging/>); Shizuoka University University of Ottawa, Centre for Law, Technology and Society (<https://techlaw.uottawa.ca/>); OCADU; University of Toronto, McLuhan Centre (<https://ischool.utoronto.ca/research/institutes-labs/the-mcluhan-centre-for-culture-and-technology/>); Ontario Shores Centre for Mental Health Sciences (<https://www.ontarioshores.ca/>); Mozilla Foundation (<https://foundation.mozilla.org/en/>); Arizona State University School for the Future of Innovation in Society (<https://sfis.asu.edu/school-future-innovation-society>).

1.4.5 Grant Opportunities

In terms of grant funding, the Digital Life Institute’s mission also aligns closely with themes and objectives identified by the Social Sciences and Humanities Research Council (SSHRC). One SSHRC objective from its current Strategic Plan (2016-2020) is “to contribute to a future research landscape that sees: more Canadian researchers and students successfully leveraging advances in new technologies, from virtual reality environments to increasingly sophisticated data analytics; and more researchers engaged in interdisciplinary research within and beyond the humanities and social sciences.” SSHRC also lays out future challenge areas for its researchers, such as: “How can emerging technologies be leveraged to benefit Canadians?” that posits “social sciences and humanities are uniquely positioned to build knowledge on the ... human dimensions that influence the creation of technologies, their impacts and their possibilities. This includes understanding the opportunities and risks associated with the investment in—and adoption of—emergent and disruptive technologies.” By responding directly to SSHRC objectives and priorities, the Digital Life Institute is well positioned for securing the necessary external funding that will establish Ontario Tech University as a leader in this field. On a recent visit to Ontario Tech University, the president of SSHRC expressed great enthusiasm for the Digital Life Institute idea, and the work already accomplished by Dr. Pedersen and the Decimal Lab.

The Digital Life Institute will be well positioned to develop partnership grants not only through SSHRC but through those major funding opportunities that seek to enhance cross-disciplinary collaboration (e.g. with NSERC and CIHR).

1.5 Student Involvement and Training

A central reason for establishing the Institute at Ontario Tech University is to afford better research sustainability at the south campus, which lacks research technology, graduate students in Digital Life Studies, and staff technicians. A goal for the Institute will be to help Ontario Tech University meet its mandate for research excellence and graduate student research training. In 2012, Ontario Tech University committed a graduate program affiliation to support the Canadian government

funding (\$1,000,000) for Dr. Pedersen's *CRC in Digital Life, Media and Culture*. It has not yet met this commitment. The formalization of the Institute will assist Ontario Tech University in securing appropriate graduate programming. For example, Digital Life Institute will be closely affiliated with the emerging multi-faculty MA program in Artificial Intelligence Studies. Further, FSSH has a proposal in progress for an MA in Communication, Law and Policy, which will also provide research assistance opportunities with the Digital Life Institute. The Digital Life Institute could further help to realize the goal of infusing existing tech-focused graduate programs at Ontario Tech University with human-centered approaches (degree programs in Computer Science, Information Security, or Health Science).

The model for HQP training that will be employed by the Digital Life Institute is, both by necessity and by design, a combination of more traditional graduate student training (research supervision plus research assistantship) and somewhat non-traditional. As a CRC, Dr. Pedersen has done an exceptional job of attracting high-calibre students and recent graduates from various academic backgrounds (e.g., History, Information Technology, Communication Studies, Philosophy), exposing them to a challenging and innovative inter-disciplinary learning and training environment; many have gone on to higher learning or jobs within start-up IT companies. Given the interdisciplinary nature of the research, Dr. Pedersen has been co-supervising graduate students in the Faculty of Business and Information Technology and the Faculty of Education. She is also appointed to the Yeates School of Graduate Studies at Ryerson University and is an Associate Member of the Joint Graduate Program in Communication & Culture at York University/Ryerson University. Her affiliations at these universities enable her to attract exceptional students and train them in the Decimal Lab, and highlight Ontario Tech as a strong dynamic academic partner in the Greater Toronto Area.

The Digital Life Institute, as a trans-disciplinary entity, can also serve as a hub for social science and humanities related training for Ontario Tech students in more technically oriented disciplines. This sort of cross-disciplinary, cross-faculty, and indeed cross-institutional training will be a central feature of the project housed in the Digital Life Institute.

Further, in line with FSSH plans to develop a "post doc culture", the Digital Life Institute will actively recruit post-doctoral researchers, who will be supported as they pursue SSHRC and other postdoctoral funding opportunities.

1.6 Resource Requirements

1.6.1. Physical Requirements

The Digital Life Institute will utilize the space that is currently housing the Decimal Lab at Bordessa Hall at 55 Bond St in Oshawa, as well as the Decimal Lab space within the Centre for Social Innovation (CSI) at 192 Spadina Ave, Toronto (<https://socialinnovation.org/location/192-spadina/>). These spaces do not require any additional renovation or equipment, as they are part of collective spaces that have access to phones, wifi, and printers.

1.6.2. Staffing Requirements

Since the Digital Life Institute builds on existing faculty collaborations and labs, a main area of growth is the acquisition of staff to help with coordination. We therefore consider the main goal for the first two years to be to establish a stable means of funding an Institute Coordinator who will be tasked with 1) managing needs and providing administrative support to all of the Digital Life Institute projects and grants acquisition, both ongoing and in development or proposal stages, and 2) providing administrative support for publicity and marketing for projects and events. Ideally this will be a full time job at \$42,000 annually, but our initial aim is half-time at \$21,000. All steering committee members will be encouraged to include funding for the project coordinator in grant applications. We are seeking internal contributions for this position (from the Deans, President's Office) to begin with.

Dedicated tech support is a longer term goal of the Digital Life Institute fundraising efforts. All of our labs suffer from outdated technology or technology that needs maintenance and updating: by pooling our grant monies and seeking donors to this end, we hope to be able to fund a tech support position as well, over the course of the next two years.

Future targeted partnerships and investors to grow and sustain the institute include:

- FOUNDATIONS:
 - Mozilla Foundion
 - Alfred P. Sloan Foundation
 - Bill & Melinda Gates Foundation
 - Digital Trust Foundation
 - Ford Foundation
 - Hewlett Foundation
 - International Data Responsibility Group
 - John D. and Catherine T. MacArthur Foundation
 - John S. and James L. Knight Foundation
 - Media Democracy Fund
 - Open Society Foundation
 - Responsible Data Forum
 - Robert Wood Johnson Foundation
 - Sara & Evan Williams Foundation
 - Siegel Family Endowment
 - Solidago Foundation
 - W.K. Kellogg Foundation
 - Pivotal Ventures (Melinda Gates)
- NOT FOR PROFIT GROUPS:
 - Canadian Civil Liberties Association
 - Center for Democracy & Technology
 - Canadian Internet Policy and Public Interest Clinic

- The Engine Room (<https://www.theengineroom.org/>)
- Upturn (<https://www.upturn.org/>)
- GOVERNMENT/PUBLIC SERVICE:
 - Durham Region
 - City of Oshawa
 - Toronto Public Library
 - Oshawa Public Libraries
 - Information and Privacy Commissioner of Ontario
 - Privacy Commissioner of Canada
- MUSEUMS:
 - Royal Ontario Museum
 - Art Gallery of Ontario
 - Robert McLachlin Art Gallery
 - Whitby Station Gallery
- COMPANIES:
 - Amazon
 - Google
 - Microsoft
 - Microsoft Research
 - North, Inc.
 - Samsung Accelerator
 - Ontario Power Generation
 - Bruce Power
 - Kinetrics
- INTERNATIONAL:
 - UN Global Pulse
 - UNICEF



Initial Governance of the Digital Life Institute

Friday, October 25, 2019

Digital Life Institute is based on the mission to support researchers and labs from across the University and that of external partners. Governance and oversight of the Institute will be through a Director and a Steering Committee comprised of the Institute Partners.

Role	Mandate	Appointment of Members
Director	<ul style="list-style-type: none"> • Coordinate and Manage administration of Institute • Foster opportunities for partnerships, donors 	Five-year term appointed according to university policy <ul style="list-style-type: none"> • Initial director: Isabel Pedersen
Steering Committee: Internal and External representation	<ul style="list-style-type: none"> • Set annual goals for the Institute for research funding; events; projects; training • Monitor progress toward those goals 	Three-year term

Director

The *Director* will govern the Digital Life Institute's progress and management, including budgetary matters and overall concerns. The Director will compile the annual report on research activities, will cultivate partnership opportunities and work with existing partners, and will set the agenda for the annual meeting. It will be submitted to the respective dean(s), with copies to the Vice-President, Research and Innovation and the Provost.

Steering Committee

The Steering Committee will be comprised of representatives from partner organizations and deans (or delegates) from affiliated faculties within Ontario Tech University. The Steering Committee will set annual goals for the Digital Life Institute for research funding; events; projects; training activities and monitor progress toward those goals. The Steering Committee will meet at a minimum of two times per year (one of them can include the annual meeting) and help prepare the annual report with the Director.

Annual General Meeting

All stakeholders of the Institute will be invited to an annual meeting to discuss the activities of the Institute in the past year (as reflected in the Director's Annual Report), as well as plans for the coming year. Stakeholders include partners, collaborating researchers, graduate students, collaborating community members, and faculty previously or prospectively involved in Institute research projects.

Goal Setting and Metrics

The Digital Life Institute will pursue the following initial goals.

Year One	<ul style="list-style-type: none"> • Initiate new research collaborations • Secure national and international partners • Research mobilization events, in Oshawa and/or Toronto • Work to apply for a SSHRC Partnership Grant or a comparable grant application.
Year Five	<ul style="list-style-type: none"> • Measure success via: <ul style="list-style-type: none"> ○ Research projects brought to fruition (publications, KM events, public resources) ○ Research funding obtained ○ Innovative trans-disciplinary collaborations ○ Further commitments from sources outside Ontario Tech – other universities, companies, not-for-profit organizations

Membership List and CVs

The CVs of the initial Ontario Tech University members of the Institute are attached as Appendix 1, including Drs. Aziz Douai, Steven Downing, Gary Genosko, Janette Hughes, Patrick Hung, Bill Kapralos, Tanner Mirrlees, Isabel Pedersen, Andrea Slane, Peter Stoett, Akira Tokuhiko, and Alvaro Uribe Quevedo.

		Institute Budget						
	Items	Year 1	Year 2	Year 3	Year 4	Year 5	Total	Justification
1. Operational Budget								
1.1 Labour Costs - Institute Staff								
	Institute Coordinator	\$ 20,586	\$ 20,998	\$ 21,418	\$ 42,642	\$ 43,495		50% FTE, 2% inflation rate (level 4, step 1 \$41,172) for first 3 years; 100% FTE in Year 4 and 5 IT does not support research labs, equipment, website administration and maintenance on university servers.
	Technician			\$ 5,000	\$ 5,000	\$ 5,000		
	Benefits (9%)	\$ 1,853	\$ 1,890	\$ 2,378	\$ 4,288	\$ 4,365	\$ -	
	SUB-TOTAL LABOUR	\$ 22,439	\$ 22,888	\$ 28,796	\$ 51,930	\$ 52,860	\$ -	
1.2 Labour Costs - Director								
	Teaching Releases (Director)	\$ 7,717	\$ 7,871	\$ 16,058	\$ 16,379	\$ 16,258		Two are necessary after the CRC ends, one is confirmed from SSH
	Benefits (9%)	\$ 695	\$ 708	\$ 1,445	\$ 1,474	\$ 1,463		
	SUB-TOTAL LABOUR	\$ 8,412	\$ 8,579	\$ 17,503	\$ 17,853	\$ 17,721	\$ -	
1.3 Institute Operating Costs								
	Decimal Lab Space (Pedersen)	\$ 32,720	\$ 32,720	\$ 32,720	\$ 32,720	\$ 32,720		InKind from FSSH (818 sq ft @\$40/sq ft)
	Toronto CSI Space	\$ 14,306	\$ 14,306	\$ 14,306	\$ 14,306	\$ 14,306		Split between FSSH and Isabel (her faculty Funds)
	STEAM-3D maker lab (Hughes)							InKind from Fed (879 sqft @\$40/sqft)
	IT Support							
	Equipment							
	Office Supplies and Services	\$ 200	\$ 200	\$ 200	\$ 200	\$ 200		basic office supplies, toner - faculties will cover most
	Staff and Director Travel							
	Steering Committee travel and accomodation							
	Other (explain)							
	SUB-TOTAL-Institute Operating Costs	\$ 47,226	\$ 47,226	\$ 47,226	\$ 47,226	\$ 47,226	\$ -	
2. Research Networking								
	Annual Meeting							
	Work-in-progress Workshops							
	Partnerships							
	Other (explain)							
	SUB-TOTAL-Research Networking	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
3. Communications								
	Website	\$ 2,000	\$ 1,000	\$ 1,000	\$ 1,000	\$ 1,000		create, maintain, expand, update website, Domain name server fees
	Other (Merchandise)							
	SUB-TOTAL Communications	\$ 2,000	\$ 1,000	\$ 1,000	\$ 1,000	\$ 1,000	\$ -	
4. Knowledge Transfer and Dissemination								
	Speaker Series							honoraria, room booking, speaker travel
	Maker Workshops							
	Symposia							
	Publication Costs							
	Conference							
	Other (explain)							
	SUB-TOTAL	0	0	0	0	0	0	
	TOTAL OPERATIONAL BUDGET	\$ 80,076	\$ 79,693	\$ 94,525	\$ 118,009	\$ 118,807	\$ -	
REVENUE								
	FSSH Contribution to Institute Coordinator	\$ 4,000	\$ 4,000	\$ 4,000	\$ 4,000	\$ 4,000		
	FSSH Contribution to Toronto CSI Space	\$ 14,306	\$ 14,306	\$ 14,306	\$ 14,306	\$ 14,306		
	FSSH Contribution to Course release	\$ 8,267	\$ 8,412	\$ 8,559	\$ 8,708	\$ 8,861		
	FSSH Inkind Contribution of Decimal Lab Spac	\$ 32,720	\$ 32,720	\$ 32,720	\$ 32,720	\$ 32,720		
	TOTAL REVENUE	\$ 59,293	\$ 59,438	\$ 59,585	\$ 59,734	\$ 59,887	\$ -	
	TOTAL OPERATIONAL BUDGET LESS REVENUE	\$ (20,783)	\$ (20,255)	\$ (34,940)	\$ (58,275)	\$ (58,920)	\$ -	