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## MEMORANDUM

ATTENTION: Senate

TEL

FROM: Jon Driver, Vice-President, Academic and Provost, and Chair, SCUP

RE: The Science and Technology for Aging Research (STAR) Institute (SCUP 16-25)

DATE: August 9, 2016

TIME

At its July 20, 2016 meeting, SCUP reviewed and approved the establishment of the Science and Technology for Aging Research (STAR) Institute as an Institute for a five-year term.

**Motion:**

That Senate approve the establishment of the Science and Technology for Aging Research (STAR) Institute as an Institute for a five-year term.

c: A. Sixsmith



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**MEMORANDUM**


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<b>ATTENTION</b>	Jon Driver, Chair, Senate Committee on University Planning (SCUP)	<b>DATE</b>	June 15, 2016
<b>FROM</b>	Norbert H. Haunerland, Associate Vice-President, Research	<b>PAGES</b>	1/1
<b>RE:</b>	Science and Technology for Aging Research (STAR) Institute		

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Attached is a proposal from Dr. Andrew Sixsmith, Professor and Director of the Gerontology Research Centre for the establishment of the Science and Technology for Aging Research (STAR) Institute. The topic of the institute is of strategic importance as it complements other activities in this field at SFU including: Community Health Solutions, CLSA, AGE-WELL and the Gerontology Research Centre.

I recommend approval as a research Institute according to Policy 40.01. Once approved by SCUP the proposal should be sent to Senate for approval and the Board of Governors for information.

Motion:

That SCUP approves the Science and Technology for Aging Research (STAR) Institute as an Institute for a 5-year term.

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Dr. Norbert Haunerland  
Associate Vice-President, Research

Attachment

C: Dr. Andrew Sixsmith, Director of the Gerontology Research Centre

# The Science and Technology for Aging Research (STAR) Institute

## Overview

Rapid advances in technology are occurring at the same time as population aging. The development of technology solutions has been identified as a key strategy for creating a society that is responsive to seniors' needs and for reducing healthcare costs. These simultaneous developments create an ideal opportunity for SFU and British Columbia to emerge as a global leader in designing technologies that optimize the health and well-being of older adults. The STAR Institute (The Science and Technology for Aging Research Institute) is a transdisciplinary institute focusing on translational research to drive innovation and in which industry, government, service providers, and academic partners work together to achieve real impact on the lives of British Columbians.

Our aim is to help older British Columbians optimize their later years through accessible technologies that improve health, increase their safety and security, support their independent living, and enhance social participation. The Institute will develop technologies to address many of the common disorders encountered in old age, such as dementia, stroke and arthritis, as well as address the social, commercial and policy aspects of using and accessing technologies. We envision The STAR Institute as an opportunity to reduce the risks of product development while generating innovations in the tech industry.

The STAR Institute is driven by three key objectives:

1. Develop talent to meet the needs of BC technology businesses
2. Stimulate innovation and opportunities in the BC technology sector
3. Promote and improve healthy aging through research, innovation, policy development, and training

## The STAR Institute Proposal

We propose to establish a new institute at Simon Fraser University's Surrey campus in the rapidly growing area of technology and aging:

- The Institute will build on a significant critical mass that already exists at SFU and will serve as a focus for research and innovation.
- An interdisciplinary institute is critical, as there has to be effective and meaningful collaboration between researchers working in areas of gerontology, social and health sciences, engineering and applied sciences, computing science, policy and business.
- The new institute will provide a platform for major proposals in the future- e.g. AGE-WELL renewal (2020), EU Joint Program and H2020 and provincial, national and international collaborations in technology and aging.

We will prioritize translational research in order to mobilize an enormous pool of talented SFU researchers and students and drive the development of new devices and systems to benefit seniors and caregivers in British Columbia (BC) as well as uncover new opportunities for BC-based companies and service providers. We have already secured several million dollars of federal and university funding to launch the Science and Technology for Aging Research (STAR) Institute (see attached).

## Context

While advancements in technology continue to accelerate, there has been little change in goals of persons in late life. Older adults want to stay in their own homes and communities; continue to be active and contributing citizens; and have choice and control over their health and wellness. And yet, age-related challenges and chronic conditions can limit one's independence and autonomy, safety and security, and ability to fully participate in society. Time-critical innovations are needed to maintain health and functioning for seniors, improve the quality of life for frail seniors, and reduce the demands on family caregivers and formal healthcare services. Emerging technologies can play a critical role in addressing these issues, enabling older adults and those with chronic diseases to extend their productive years and maintain their health and well-being. A recent report by the Canadian Institute for Health Information<sup>1</sup> identified the adoption of new technologies as a key strategy for creating a health system that is responsive to seniors' needs and accommodating the rising number of seniors in the population.

## Mission

The Science and Technology for Aging Research (STAR) Institute will provide a unique opportunity for researchers, trainees, and industry and community partners to work together on critical issues of aging and technology. The mission of The STAR Institute is

*...to make Simon Fraser University a world leader in research and innovation in the aging and technology sector, becoming an essential resource for industry and services in British Columbia.*

## Objectives

As an "engaged" research institute, the objectives of The STAR Institute are aligned with the priorities of our stakeholders (e.g., Provincial Ministries, City of Surrey, Fraser Health Authority, the Seniors Advocate, senior and caregiver organizations, technology industry, long-term care and home care service providers). Our key objectives are to:

- **Build capacity** and opportunities in the aging and technology sector that will increase and expand businesses and jobs in British Columbia.
- **Improve access** to information and the engagement of citizens, businesses, researchers and decision makers.

- **Promote healthy aging** through innovation, research, and training in order to reduce healthcare costs, increase efficiencies, and improve outcomes.

## Translational Research

The STAR Institute is committed to mobilizing the significant talent of SFU researchers and students to develop new solutions that will meet the needs of BC seniors and caregivers, create new opportunities within the growing aging and technology sector, and generate new companies and new jobs in British Columbia. Translational research requires stakeholders to be closely involved in the **co-creation of research and innovation**, where research questions are informed by the needs of stakeholders and innovations address real world problems. Thus, The STAR Institute will create a unique multidisciplinary and interactive research and development environment where researchers and stakeholders work collaboratively to design and implement new innovations for market and create real impact on society and the BC economy.

## Market Opportunities

Three markets in the aging and technology sector have been highlighted in multiple business reports as high investment priorities: 1) Long-term care facilities or nursing homes, which is a \$23 billion market; 2) Home care systems, such as Home Health Monitoring from Telus, which was over \$12 billion<sup>2</sup> in 2015; and 3) Direct-to-consumer healthcare technology, such as wearables (e.g., iWatch), which will reach \$53.2 billion worldwide by 2019. To support and compete in these growing markets, British Columbia needs an academic/industry center in which companies and researchers can co-create innovations to address our community needs, while reducing the costs/risks associated with new development. Such centers have been essential in the economic development of the tech sector in places like Silicon Valley, with Transformative Learning Technologies Laboratory at Stanford, and in Boston with Media lab at Massachusetts Institute of Technology (MIT). While significant work has been accomplished in the area of technology and aging, with several successes by STAR Institute investigators, **British Columbia is lagging behind the rest of the world with respect to output, the application of new knowledge, building capacity through skilled highly qualified personnel (HQP), and industry and community receptors.**

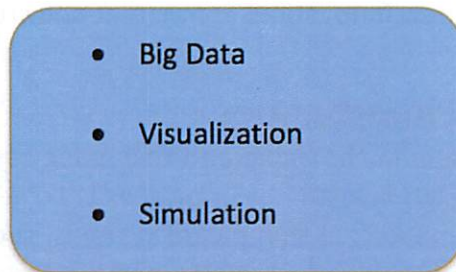
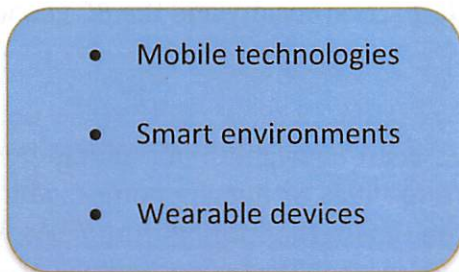
The STAR Institute's translational scope is designed to support stakeholders and industry in BC through the development of innovative applications and solutions. **There are three key markets for research conducted within The STAR Institute:**

- **Long-term care:** A significant portion of healthcare spending is on adults living in nursing homes; the 5% of the population in residential care use 21% of the healthcare resources. Long-term care (LTC) settings support individuals who require assistance with activities of daily living, have complex care needs, and/or dementia. Well-being and safety in LTC are critical issues for improving efficiencies and outcomes in this sector and the number of seniors requiring complex care is on the rise.
- **Home care:** Home care services support older adults to remain living in their own homes. Supports can range from meals to health monitoring. Many older adults with physical or

other limitations could live well in their homes but developing assistive devices and automated systems to support people at home is crucial large increase in this market is due to a strong demand from the aging population, indicating a clear industry priority.<sup>2</sup>

- **Direct-to-consumer healthcare:** This is becoming a massive area for investment in the aging and technology sector and is essentially about helping people to keep healthy and to “age well”. Applications may range from physical and mental fitness monitoring (e.g., wearable devices) and training (e.g., exercise apps), to gaming and social connectedness to sustain brain skills and promote a good quality of life. A major unknown in this market is the aging population needs in term of use, interactions and possibilities. An area in which The STAR Institute expertise will give a crucial advantage to our industry.

Our translational scope will include research in these **key technology areas:**



Solutions we are already working on range from a portable device that monitors brain vitality, to safety systems for wheelchairs, to an exoskeleton that assists with rehabilitation. We are also aware that these outcomes could also have outcomes beyond aging. For example, a device that aids mobility might have value to other groups as well as old adults. Much of the work, including the plans for trainees and the commercialization pathway, applies to many areas, but putting it in the context of aging leverages our existing strengths, recent funding successes and current political will. Our plans have validity and impact well beyond the field of technology for healthy aging. For example, if we succeed in defining pathways and connections between industry, community, researchers and end users that accelerates commercialization of aging technologies would establish a position for SFU in the pull model of innovation that will provide an excellent base model for other health tech innovations and other industries.

## Action Plan

We will build upon our established team to 1) attract talent by providing resources for new investigators to conduct research, 2) utilize the current infrastructure to engage across disciplines within and outside of the university setting, and 3) facilitate innovation and entrepreneurship through partnering and co-creation with our stakeholders.

## Academic engagement and translational research

Our research will be IMPACT and OUTCOME driven (pull model rather than the technology push model that typically has not worked well). We will do this by aligning the research with market opportunities, working with partners who are going to mobilize and

commercialize products and involving end-users at all stages of the research. Our aim is to establish a new academic culture in British Columbia that combines research excellence and meaningful industry and community partnerships. Creating made-in-BC technologies that have impact on our citizens, through incentives for current and emerging SFU academics to be involved in co-creation, offering course releases and opening a Junior Research Chair in industry partnership.

### **Develop new talent to address industry needs**

The aging and technology sector offers a major opportunity for research and industry - it is crucial that we develop new solutions to meet the needs of an aging population, but this will require new approaches that focus on real-world impact. Highly Qualified Personnel (HQP) are students, trainees, fellows, research staff and junior faculty members. Our HQP will be exposed to multi-disciplinary research environments as well as industry and community partners through experiential learning opportunities: courses, workshops, internships and mentorship. Training via AGE-WELL's EPIC program emphasizes the development of skills, ideas, teamwork, and relationship-building that constitute the building blocks of a successful career: team working, entrepreneurship and KT, ethics and impact.

### **Support innovation and entrepreneurship**

We will develop new mechanisms to co-create and share knowledge, methods, tools and resources across affiliates of The Star Institute, including our industry network, to create a commercialization path that will meet the needs of the aging and technology sector. We will address the needs of start-up companies, such as Conquer Mobile, as well as large corporations, such as Telus, by supporting research/industry partnership projects. The STAR Institute will create a multidisciplinary environment in which prototype design, creation, testing and validation, spin-off creation, commercialization, business development and knowledge dissemination, mobilization, and translation activities form the foundation of our efforts. Our projects will serve to accelerate British Columbia's innovations and economic competitiveness, and improve the quality of life for older adults and caregivers throughout British Columbia.

### **Build on excellence**

The STAR Institute will build on significant assets that are already in place.

**Innovation Boulevard** (IB, <http://www.innovationboulevard.ca>) is an agile partnership of health, business, higher education and government creating new technologies to improve people's lives. First, this environment engages various industry partners from start-ups to leading health tech companies, including Biomark Diagnostics, Cambian, Conquer Mobile, NucleusLabs, NZ Technologies, Philips Healthcare, Retirement Concepts, REVA Solutions, Starfish Medical and Target Tape. Second, IB is a dense network of healthcare organizations: Fraser Health Corporate Office, Surrey Memorial Hospital, Jim Pattison Outpatient Centre and BC Cancer Agency. Finally, three universities collaborate within IB: Simon Fraser University, Kwantlen Polytechnic University and a UBC teaching hospital. We have a number of partnerships in place with companies such as Telus.

**AGE-WELL** (Aging Gracefully across Environments to Ensure Well-Being, Engagement and Long Life, <http://agewell-nce.ca>) is a \$36.6 million federally funded Network of Centres of Excellence (NCE) focusing on technology and aging. SFU Surrey will be AGE-WELL's first **Innovation Hub** creating an ecosystem that connects researchers with industry partners and end users who will benefit from the initiative's activities. AGE-WELL is providing \$5 million in funding for 16 SFU researchers and 19 HQPs in seven of its 25 projects in areas such as assistive technologies, mobile robots, the creation of wearable technologies, and virtual games. AGE-WELL is co-led by SFU Gerontology Professor, Andrew Sixsmith, and the Barbara G. Stymiest Chair in Rehabilitation Technology at the Toronto Rehabilitation Institute University Health Network, Alex Mihailidis.

**Seamless Care through Technology** is a \$1.3 million research initiative funded by SFU's Community Trust Endowment Fund (CTEF) to, "create critical care designed, point of care enabled technologies that keep people out of hospitals." The initiative is a network of interconnected projects and embedded tech-labs at SFU Surrey with key nodes in Innovation Boulevard (e.g. Surrey Memorial Hospital). The network is lead by a team of seventeen SFU researchers and 13 HQPs.

**The STAR Institute has secured:**

- \$5 million in funding, plus partner in-kind and cash contributions
- 10 Translational research projects committed to aging and technology
- 25 Faculty researchers, including world-class leaders in their field
- 36 HQPs who are engaged in the EPIC interdisciplinary training program

### **International research strategic partnerships**

The STAR Institute will create international strategic partnerships to increase the impact of The Institute and attract multi-national companies to British Columbia. First, The STAR Institute will provide a home base for the Secretariat of the International Society for Gerontechnology (ISG), the leading international organization of researchers focused on technology and aging. Then, in partnership with AGE-WELL and ISG, The Institute will offer opportunities for researchers and partners in major international research programs, such as AGE-WELL's participation in the European Union Ambient Assisted Living Joint Programme. One example of this vision is our current international relationship with the Auvergne Region (French province) in which affiliates of The Star Institute are partnering on a \$25 million European innovation project; and our virtual coach project in partnership with Philips Health Care Europe for H2020 multi-million European project call.



## Infrastructure

The STAR Institute will be integrated throughout Surrey's Innovation Boulevard (IB) in key research and development spaces in order to support engaged research, including:

- Digital Health Hub - a laboratory and operations space where students and researchers develop their ideas for real world application.
- Bridges to Surrey – part of the Health Tech Innovation Hub at City Centre 1, across the street from Surrey Memorial Hospital, provides a collaborative industry-academic space accessible to affiliates of The STAR Institute.
- SFU Surrey campus – an academic centre, linked to the public as well as to IB, will serve as the home base for The STAR Institute.
- Clinical research nodes – Proven community and industry partners in locations throughout IB (e.g., Surrey Memorial Hospital, Retirement Concepts Innovation Centre) will host and support research activities for affiliates of The STAR Institute.
- IRMACS and Big Data Hub – The IRMACS Centre on Burnaby campus will provide support in connection with Institute activities.

While these are sufficient for current operations, we are consulting with the Director of Surrey campus about future space requirements.

## References

1. Canadian Institute for Health Information. Health Care in Canada: 2011. A Focus on Seniors and Aging.
2. IBIS world report: 2015. Home Care Providers in Canada Market Research Report.

## Key personnel in STAR Institute

**Andrew Sixsmith, PhD**, is Professor and Director of the Gerontology Research Centre at Simon Fraser University. He is the Secretariat of the International Society for Gerontechnology (ISG), the world's foremost organisation for researchers in technology and aging, and the Scientific Director of AGE-WELL Network of Centres of Excellence. Dr. Sixsmith has been a member of the British Society of Gerontology Executive Committee and the UK representative on the EU's COST-A5 Committee on Ageing and Technology. Since 2000 he has developed research and teaching links with 26 universities worldwide and has actively collaborated with over 30 major commercial and government organisations. His research interests include development of technologies for independent living, modeling well-being of seniors, long-term care and theory, and methods in gerontology.



**Sylvain Moreno, PhD**, Director of the Digital Health Hub, School of Engineering, Simon Fraser University, is a specialist in neuroscientific technologies related to digital media and brain fitness solutions. Dr. Moreno has been the recipient of many awards from national and international organizations such as the Early Researcher Award from The Ontario Ministry of Economic Development and Innovation (2014). His work has received widespread press in various media outlets including the The New York Times and Forbes. He has authored several scientific publications and patents with real-world impacts in clinical and educational environments. He is also the Co-Founder of several start-up companies in the high-tech sector.

**Carolyn Sparrey, PhD**, is an Assistant Professor in Mechatronics at Simon Fraser University. Dr. Sparrey's research focus is on biomechanics and biomaterials. Dr. Sparrey leads Simon Fraser University's Neurospine Lab, works closely with surgeons at Surrey Memorial Hospital research to clinically relevant problems. Dr. Sparrey is also the lead investigator on a \$1.3 million research initiative funded by SFU's Community Trust Endowment Fund (CTEF) to, "create critical care designed, point of care enabled technologies that keep people out of hospitals."





**Sarah Lubik, PhD** is Director of Entrepreneurship for SFU, a lecturer in entrepreneurship and innovation at the Beedie School of Business, and co-director of the Tech Entrepreneurship@SFU program. She is currently focused on stimulating and supporting university-based entrepreneurship with a focus on interdisciplinary entrepreneurship and innovation. In her research, she is particularly interested in early-stage strategy formation, partnerships, market selection, innovation ecosystems and incubation.

**Carlo Menon, PhD** received a Laurea degree in Mechanical Engineering from the University of Padua, Italy, in 2001, and a Ph.D. degree from the same university in 2005. He was a Technical Officer at the European Space Agency, The Netherlands, in 2005 and 2006. In 2007 he joined the School of Engineering Science at Simon Fraser University (SFU), Canada, as an Assistant Professor and founded the Menrva Research Group (<http://menrva.ensc.sfu.ca>). Since 2012 he has been an Associate Professor within the same School. Dr. Menon received the International IAF Luigi G. Napolitano Award, Spain, in 2006, and the International BIONIS Award on Biomimetics, UK, in 2007. In 2012 he received both the Career Investigator Award from the Michael Smith Foundation for Health Research (MSFHR) and the New Investigator Award from the Canadian Institutes of Health Research (CIHR). He has published over 250 articles including both journal and conference papers. Dr. Menon is a member of the editorial board of the Journal of Bionic Engineering and Associate Editor of Bionics and Biomimetic, Frontiers. He is an AIAA, IEEE, and ASME member.



## Stakeholder priorities

Priority	STAR Institute
<p><b>Provincial Government</b> BC's Technology Strategy Goals</p> <ol style="list-style-type: none"> <li>1. Accelerate technology commercialization and adoption.</li> <li>2. Build on regional strengths to create new opportunities.               <ol style="list-style-type: none"> <li>a. Facilitate the expansion and ongoing development of regional innovation networks.</li> </ol> </li> <li>3. Develop talent for a knowledge-based economy.               <ol style="list-style-type: none"> <li>a. Create new opportunities to build B.C. talent and deploy B.C. technology through B.C.'s Education Plan.</li> <li>b. Harmonize provincial commercialization and entrepreneurship programs to meet the needs of industry and post-secondary partners, and create sustainable programs that provide talent development in all Jobs Plan sectors</li> </ol> </li> <li>4. Expand markets for British Columbia technology.</li> </ol>	<p>The STAR Institute can be an integral component in achieving the BC Technology Strategy goals. Particularly goals 2 and 3: to build on regional strengths to create new opportunities and develop talent for a knowledge-based economy.</p> <p>The STAR Institute brings together a network of BC researchers (45), trainees (25+), and commercial and community partners (25+) involved in aging, technology, and health at the Surrey Innovation Boulevard. The STAR Institute is a regional strength that, with further support, will continue to develop BC talent in aging and technology, support the commercialization and implementation of emerging technology and other innovations that support healthy aging.</p> <p>With the aging population we support the training and development of highly qualified personnel to meet the needs of this market.</p> <p>Network of national and international partners through AGE-WELL.</p>
<p><b>Ministry of Technology, Innovation &amp; Citizens' Services</b> Goal 1: Create conditions for BC business to be successful Objective 1.1: Position BC as a destination for the technology sector and innovation Strategies:</p> <ul style="list-style-type: none"> <li>• Encourage the development, commercialization and adoption of technologies and processes that align with government priorities</li> <li>• Work with private sector, post-secondary partners and other ministries in support of</li> </ul>	<p>Building on the momentum of the Surrey Innovation Boulevard, the STAR Institute establishes a critical mass of experts in aging and technology at SFU Surrey, further building on the Innovation Boulevard as a destination for technology and innovation.</p> <p>The STAR Institute is collaborating with 25 industry and community partners, and counting. These partnerships can provide students with access to internships and practicums in private business, emerging technologies with commercialization supports,</p>

<p><i>BCs Technology Strategy</i></p> <ul style="list-style-type: none"> <li>Encourage commercialization and knowledge transfer between universities and businesses</li> </ul> <p>Goal 2: Make it easier for citizens and businesses to interact with government</p>	<p>and ongoing knowledge transfer opportunities.</p> <p>The STAR Institute is working on a number of projects addressing information technology and communication. For example we are starting a project to better understand the digital divide for older adults.</p>
<p><b>Ministry of Health</b></p> <p>Review dementia care and provide options to cabinet to improve patient and health care worker safety.</p> <p>Improve seniors care.</p>	<p>We have established relationships and active projects with a number of long term care facilities in BC that can contribute to a better understanding of dementia care, for example:</p> <p>“Using brain monitoring and video surveillance to reduce violent incidents in a care-facility environment”</p> <p>“Fall Detection and Activity Monitoring using a Wearable Wrist Device”</p> <p>“Interinstitutional relocations: Developing guidelines and mobilizing knowledge”</p>
<p><b>Ministry of Advanced Education</b></p> <p>1: Students are supported to achieve their education, employment &amp; training goals</p> <p>Objective 1.1: Align post-secondary education and training with labour market demand to achieve a highly skilled workforce.</p> <p>2: Maintain a quality post-secondary education system that provides BC with a global competitive advantage.</p> <p>Objective 2.1: Increase international participation</p> <p>Objective 2.3: Increase collaboration, innovation and partnerships.</p> <p>3: An education and training system that maximizes return on investment and supports BC’s diverse communities.</p> <p>Objective 3.2: Foster knowledge development to support the creation of new ideas and solutions to a range of economic, social, scientific and environmental issues.</p> <p>Objective 3.3: Use and provide quality information for decision-making and better societal outcomes.</p>	<p>Expertise in aging and technology is a growth sector, providing training and internships in this area will provide students with a competitive edge in the labour market.</p> <p>Creating this institute at SFU will further support the quality of the training provided at SFU and attract global attention.</p> <p>The institute is intended to support the training, innovation, and implementation of creative solutions to improve the health and well-being of older adults and caregivers, reducing inefficiencies and improving outcomes.</p> <p>For example:</p> <p>The aim of the OA-INVOLVE project is to develop best practices to support the active involvement of older adults in AGE-WELL projects.</p> <p>DRIVE: Developing Regional health Innovation Solutions is developing models for effectively engaging and sharing knowledge across stakeholder groups.</p>

<p><b>Fraser Health Authority</b>  Overarching goals include: high quality care &amp; services; reducing hospital use; ensuring timely access to appropriate surgical care; engaged and motivated workforce.  From the Health Aging Report 2014  Containing costs related to aging population:</p> <ul style="list-style-type: none"> <li>● Affordable and Adaptive Housing</li> <li>● Preventing Injury and conditions that limit independence</li> <li>● Public health and preventative medicine strategies to reduce acute care services</li> </ul>	<p>INToCARE: Innovation Technology for Caregivers</p> <p>COG-ASSESS: Automated Assessments of Cognitive Impairment Using Environment-based Sensing</p> <p>WaRM: Developing IBM’s Watson System to Provide Insight Using RAI-MDS Continuing Care Data</p>
<p><b>City of Surrey</b>  Surrey Innovation Boulevard goals are:</p> <ol style="list-style-type: none"> <li>1. Improve health outcomes</li> <li>2. Attract talented clinicians and researchers</li> <li>3. Implement intelligent solutions for the health care system</li> <li>4. Grow companies in the health care technology and services sectors.</li> </ol>	<p>The STAR Institute has an established and growing group of emerging and recognized clinicians and researchers, this network of expertise will serve as a mechanism for further attracting talent.</p> <p>The STAR Institute and it’s network of BC made projects are specifically working on improving health outcomes, developing intelligent solutions for the health care system and growing companies in the health care technology and services sectors. For example, AGE-WELL projects such as PRED-FALL is working on predicting, detecting, and preventing falls and fall-related injuries for older adults in institutional care; COG-ASSESS is working on monitoring strategies that can predict cognitive decline with the potential of reducing the impact on the health care system; and CoPILOT is developing technologies to support mobility independence in power wheelchair users and is the process of commercializing it’s innovations with one start-up launched and another business plan underdevelopment.</p>
<p><b>Older Adults</b>  City of Vancouver Seniors Dialogues (May 2013)</p> <ul style="list-style-type: none"> <li>● Built environment – age friendly features e.g improving sidewalk maintenance,</li> </ul>	<p>CDH through AW WP CONNECT PLAY are creating interactive games that promote social connectedness and support cognitive development.</p>

<p>seating, street lights, crosswalk safety, accessibility, affordable parking</p> <ul style="list-style-type: none"> <li>• Housing options – connect older adults with info on available senior housing; more options for seniors housing</li> <li>• Human services – provide info on available supports and services in accessible formats (not just online); more services reflective of diversity of seniors</li> <li>• Active living and getting outside – seniors specific rec programs across areas so can be active close to home; develop age-friendly parks and outdoor facilities</li> <li>• Social connectedness – more spaces close to where seniors live that encourage socialization; opportunities for seniors to be involved in volunteering; intergenerational community events</li> </ul> <p><b>Seniors Advocate</b></p> <p>As the representative for older adults in the province the Seniors Advocate has been out talking to older adults and captured the pressing issues for this community. Primary areas are: Health care, Housing, Income supports, Personal supports, and Transportation</p> <p>Current focus areas include:</p> <ul style="list-style-type: none"> <li>• Supporting caregivers;</li> <li>• Inequity amongst low-income seniors in the provision of supplemental health benefits such as dental care, eyeglasses, hearing aids and mobility aids;</li> <li>• Challenges with Fair PharmaCare.</li> </ul>	<p>We know older adults in BC are looking to be involved in decision-making and activities that effect their lives.</p> <p>CDH through AW WP OA-INVOLVE and CONNECT-CREATE and other initiatives, are creating opportunities, strategies, and building capacity for older adults to be active participants and creators of the research process and narrative.</p> <p>We know that older adults are not accessing information regarding services and supports that could be crucial to their quality of life. CDH through GRC is working on projects that are exploring the digital divide, information access, and the needs of BC older adults.</p>
<p><b>SFU</b></p> <p>President’s Office: Strategic Vision</p> <p>“To be the leading engaged university defined by its dynamic integration of innovative education, cutting-edge research and far-reaching community engagement”</p>	<p>The STAR Institute will embody the SFU strategic vision – it is a research institute designed to provide innovative training opportunities integrated with our cutting-edge program of research that is responding and embedded in our community of stakeholders.</p>

<p>Vice President, Research: Strategic Research Plan, under development, proposed objectives:</p> <ol style="list-style-type: none"> <li>1. Accelerate SFU's trajectory towards becoming a leading research-intensive university</li> <li>2. Recruit and retain outstanding students, research fellows, and faculty</li> <li>3. Ensure all students have the opportunity to participate in research</li> <li>4. Recognize and promote SFU research and scholarship</li> <li>5. Grow our open access, open data, and open innovation capacities</li> <li>6. Enhance connections between researchers across communities and disciplines</li> <li>7. Optimize resources and support structures to maximize impact</li> <li>8. Expand and refine metrics to measure our performance</li> </ol>	
<p><b>Industry - Technology</b>  Telus  "Give where we live"</p> <ul style="list-style-type: none"> <li>• Creating solutions that harness healthcare information to help transform the healthcare system and health outcomes to benefit all Canadians</li> <li>• Expand Telus Health's position as the leading organization focused on healthcare IT development</li> </ul> <p>Philips Healthcare</p> <ul style="list-style-type: none"> <li>• Health and sustainability through innovation</li> <li>• Improving lives through meaningful innovation</li> </ul>	<p>We are already working with industry partners on emerging innovations such as:</p> <p>The MedTech Lab is responsible for developing, advancing, and implementing complex medical imaging technologies, i.e., medical resonance imaging (MRI) and magnetoencephalography (MEG), to address research and clinical challenges.</p> <p>PRED-FALL Technologies to Predict, Prevent, and Detect Falls</p> <p>WaRM: Developing IBM's Watson System to Provide Insight Using RAI-MDS Continuing Care Data</p>
<p><b>Industry – Service Providers</b>  Retirement Concepts</p> <ul style="list-style-type: none"> <li>• Quality and safety; customer service</li> <li>• Employee and community engagement</li> <li>• Innovation, technology and enhanced citizenship</li> </ul>	<p>We are already working with Retirement Concepts on projects such as:</p> <p>"Using brain monitoring and video surveillance to reduce violent incidents in a care-facility environment" - a Mitacs intership and through AGE-WELL CONNECT CREATE Promoting Social Connectedness through Collaborating on Digital Storytelling and Knowledge Creation</p>



**Baptist Housing**

- **Build strong teams, achieve operational excellence and expand the ministry**

**and Sharing**

**Amongst others.**

**The STAR Institute through GRC projects is working with Baptist Housing to evaluate their innovations and support their developing expertise through an integrated knowledge mobilization project.**

**Institute funding 2016-2020**

This comprises assets already in place and does not include estimates of potential funding based on proposals in development.

<b>Projects</b>	<b>Activities</b>	<b>Funding</b>
AGE-WELL core funding	AGE-WELL funding for supporting activities, including training, team-working, commercialization, AGE-WELL core facility activities, Scientific Director Stipend (Sixsmith)	\$1,480,000
Seamless Care (CTEF) core funding	As above, including commercialization, admin and AGE-WELL contribution for Surrey Innovation Hub	\$460,000
AGE-WELL projects	5 SFU research projects funded by AGE-WELL (2016-17, renewal not built into forecast)	\$938,600
Seamless Care projects	5 Projects/nodes funded through CTEF	\$704,000
Affiliated projects	16 other technology and aging-related projects (2016-2017)	\$727,000
<b>Total</b>		<b>\$4,664,000</b>

## Science and Technology for Aging Research (STAR) Institute

### 1. Purpose and objectives

The Science and Technology for Aging Research (STAR) Institute at Simon Fraser University's Surrey Campus will serve as the focus for translational research in the rapidly growing area of technology and aging.

The STAR Institute is affiliated with Simon Fraser University and conducts its activities in such a way as to enhance the reputation and the programs of the University.

The mission of the STAR Institute is

***...to make SFU a world leader in research and innovation in the aging and technology sector, becoming an essential resource for industry and services in British Columbia.***

The Institute will achieve its objectives by encouraging and supporting excellence in research in technology and aging and carrying out translational activities to ensure that new knowledge and intellectual property is effectively mobilized for the benefit of citizens and economy of Canada.

### 2. Governance

- 2.1 The Institute is constituted as a research Institute at Simon Fraser University under the terms of SFU Policy R 40.01, "Research Centres and Institutes". If this document and University policy differ on any issue, University policy shall prevail.
- 2.2 The Institute comes under the direct authority of the Vice President Research and conducts its affairs in accordance with all other University policies. The term of the Institute is five years as per SFU Policy R 40.01.
- 2.3 The Institute is governed by a Steering Committee and headed by a Director and Executive Committee and is affiliated with the AGE-WELL Network of Centres of Excellence (subject to an ongoing Memorandum of Understanding - see attachment)
- 2.4 An annual report on the Institute's activities and financial status from April 1st to March 31st, including the current membership of the Institute and Steering Committee, will be submitted to the Vice-President Research by June 30th of each year.

### 3. The Director of the STAR Institute

- Is an SFU faculty member nominated by the Steering Committee and appointed by the Vice President Research;
- The Director serves a renewable three-year term;
- The Director's tasks include the following responsibility, which he/she may delegate but not abrogate;
  - Chairing the Executive Committee;
  - Overseeing the Institutes finances;
  - Identifying opportunities and synergies for STAR Institute collaborations;
  - Recruiting members;
  - Hiring Centre personnel, including support staff and research assistants;
  - Preparing the annual report to the Vice-President, Research.

#### 4. The Steering Committee:

- The focus is on “translational research” that requires a Steering Committee that is not based on traditional disciplinary research:
  - 3-4 faculty members including Director drawn from key Faculties/Schools;
  - 3-4 community based members drawn from stakeholder groups such as the City of Surrey, government agencies, SFU;
- The Chair of the Steering Committee will be elected from within the group
- Members of the Committee serve one-year renewable terms;
- The task of the Steering Committee is to oversee and advise the overall direction of the Centre and to oversee the management of its operations. While it normally operates by consensus, when necessary it can make decisions by majority vote, including the appointment of new members of the Steering Committee;
- Initial Steering Committee members are listed below.

#### 5. The Executive Committee

- Comprises 2-5 Associate Directors and the Director, who will serve as Chair;
- Members of the Exec Committee are appointed by the Steering Committee;
- The Executive Committee is responsible for the management of the operations of the Institute;
- Initial Executive Committee members are listed below;
- The Executive Committee tasks include, but not restricted to, the following: planning and managing Institute activities; coordination and liaison with AGE-WELL; fundraising and grant applications.

#### 6. Collaboration

While wholly subject to the governance outlined above, the Institute will work closely with local, national and international research and innovation organizations working in the field of aging, innovation and technology.

The Institute will serve as a catalyst for collaborative research and outreach activities on technology and aging across faculties and departments at SFU, such as (but not restricted to) Gerontology Research Centre and Department, Health Sciences, Public Policy, Beedie School of Business, Faculties of Science, Applied Science, Arts and Social Science, etc.

#### 7. Membership

Membership of the Institute will be available to:

- Researchers, HQP and other individuals
- Academics within SFU, Canada and elsewhere in the world with an interest in and a commitment to aging, technology and innovation;
- Researchers linked to the Institute through its projects and other activities;
- Individuals within the wider community (industry, community, not-for-profit, government, etc.) with an interest in the Institute’s activities;
- HQP (students, technicians, research fellows).

#### Research projects

- SFU research projects funded through the Seamless Care project and the AGE-WELL NCE will be Institute projects;
- Projects funded by other sources can be affiliated to the Institute and AGE-WELL;
- Research projects will benefit from involvement in the Institute and AGE-WELL activities and support and will be required to fulfill certain responsibilities regarding impact of their research (training, participation in outreach activities, business planning and reporting).

### **Community partners**

The STAR Institute and AGE-WELL also have opportunities for organizations within the wider community (industry, service providers, community, not-for-profit, government, etc.) to become partner members through direct involvement in projects (e.g. cash or in-kind support) or through MoUs that outline their participation in the Institute's activities.

Membership is proposed by the Director and approved by the Steering Committee.

### **8. Funding**

Initial funding for the activities of the Institute has been secured through the federation of Seamless Care through Technology (CTEF-funded) and AGE-WELL funding coming to SFU. This amounts to approximately \$7 million 2016-2021 and provides funding for core activities and for associated research projects. Additional and ongoing funding will be secured from sources external to the university.

## Initial List of STAR Institute Members

### Initial Steering Committee

**SFU:** Andrew Sixsmith (Gerontology), Richard Smith (Centre for Digital media), Ryan D'Arcy (Applied Sciences), David Whitehurst (Health Sciences)

**Community:** Donna Jones (City of Surrey)

**Industry:** Brendan Byrne (TELUS)

**Health:** Fabio Feldman (Fraser Health)

**Long-term Care:** Dayle Krahn (Baptist Housing)

### Initial Executive Committee

Andrew Sixsmith (Director, Gerontology), Sarah Lubik (Beedie School of Business), Sylvain Moreno (SIAT), Carolyn Sparrey (Mechatronics), Carlo Menon (Engineering)

### Researchers and Research Projects

#### CTEF Seamless Care Projects

CTEF-Medtech

CTEF-Neurotech

CTEF-Digital Health Hub

CTEF-Rapidtech

CTEF-Healthtech Connex

#### AGE-WELL Projects

AW-1.3 OA-INVOLVE (J. Sixsmith)

AW-4.1 CONNECT-TECH (D. Kaufman)

AW-4.2 CONNECT-PLAY (D. Kaufman)

AW-5.2 PRED-FALL (S. Robinovitch)

AW-6.2 COG-ASSESS (N. O'Rourke)

AW Platform project (U Glaesser)

AW CC3 Transdisciplinary working (J Sixsmith)

AW Scientific Director stipend (A Sixsmith)

AW Postdoctoral Fellowship Piper Jackson (A Sixsmith)

AW SFU Core Facility (F Breden)

#### Other Projects

Assessing music (S. Moreno)

Caribbean Quest Game (S. Moreno)

Working memory as a mechanism (S. Moreno)

Music Based Training (S. Moreno)

NSERC post-doctoral student grant (S. Moreno)

Baptist Housing Evaluation (A. Sixsmith)

Baptist II (A. Sixsmith)

Kiwanis Housing Evaluation (A. Sixsmith)

Housing First (A. Sixsmith)

Video surveillance to reduce violent incidents (C. Sparrey)

'Point of Care' traumatic brain injury management device (C. Sparrey)

Fall Detection and Activity Monitoring (E. Park)

Intelligent Mobile Personal Emergency Response System (F. Golnaraghi)  
The development of a disposable stick-on-hip protector (S. Robinovitch)  
Performance and success metrics (S. Lubik)

**Community Partners**

City of Surrey  
Telus  
Fraser Health

From: **Megan Crouch** mcrouch@sfu.ca  
Subject: **Library Report: Science and Technology for Aging Research (STAR) Institute**  
Date: **June 23, 2016 at 9:58 AM**  
To: **Valerie Murdoch** murdoch@sfu.ca  
Cc: **Patty Gallilee** plg@sfu.ca, **Christine Manzer** cmconnc@sfu.ca, **lib-courseassessment** lib-courseassessment@sfu.ca



Dear Val,

I've reviewed the proposal for the Science and Technology for Aging Research (STAR) Institute.

No additional library resources will be required to support it.

**This email will serve as your record that the Library has conducted the assessment of the proposal as it moves through the approval process. Once the Institute has been approved, it will appear on this list:**  
<http://www.lib.sfu.ca/about/overview/collections/course-assessments/other>

Please let me know if you have any questions.

Best,  
Megan

Megan Crouch  
Collections Librarian  
Simon Fraser University Library  
Tel: 778.782.4962

\*\*I am on campus Tuesday through Friday until 2pm, and work from home on Mondays\*\*

On 06-20-2016, at 11:41 AM, Valerie Murdoch <[murdoch@sfu.ca](mailto:murdoch@sfu.ca)> wrote:

Hi Megan,

Would you please vet the attached proposal to establish the Science and Technology for Aging Research (STAR) Institute.

Thank you for your help!

Val

Manager, Finance and Administration  
Office of the Vice-President, Research  
Simon Fraser University  
Bus: 778.782.4370

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