

## 2016 SRCA Growth Grant Recipients - Round 1

### **Heidi Overhill (FAAD), Phantom Space in the Kitchen, \$5,000**

This project will apply Sheridan's expertise in 3D visualization to the planning of domestic kitchens. The project aims to develop a library of 3D models that will shift design attention away from a two-dimensional floor plan and onto the volumetric activities of users, taking a 3D "jigsaw puzzle" approach to space planning. This work is important in seeking to develop design tools applicable to a large industry. It is innovative in reframing the "problem" of the kitchen as human gesture, rather than cabinetry.

### **Allison Fitzgibbon (FAHCS), Paula Ogg (CTL), Alexa Roggeveen (FAHCS), Building and Evaluating a "Survive and Thrive" App for Sheridan Students, \$5,000**

Thousands of students start new programs at Sheridan each year, going through the process of figuring out everything they need to know, from the basic (where's the Tim Hortons?) to the more complex (how does Add-Swap-Drop work?). While resources abound and opportunities to orient students are offered, the quantity of institutional information we expect students to learn in a brief period is vast. Ideally, Sheridan wants to see its students quickly figure out how to not only *survive*, but *thrive* by feeling at home in what may be the student's academic home for many years to come. This project, then, explores very new territory in meeting the needs of students in a post-secondary environment. Our evaluation of the success of this app would facilitate improvement of its development, and contribute to the scholarship of teaching and learning literature on meeting the needs of adult learners using mobile technology.

### **Alexander Levchenko (FAST), Electronic Monitoring of Continuity of Care, \$5,000**

Care continuity, defined as the quality of care over time for patients or clients in need, is a critical component of high quality care. Care continuity has a significant impact on health, economic and social outcomes, and on the reduction of individual physical, mental, and social disabilities. Unfortunately, continuity of staff assignment is difficult to keep track of at an organizational level. Currently, it is being tracked by reviewing residents charts to identify which staff delivered care to individual residents on a given day, as well as information from worksheets and assignments developed for payroll and reporting purposes. We will develop a system to automatically collect and process the information of "encounters", that is interactions or care delivery episodes between individual residents and staff members. The system will consist of low-cost, low power, microcomputer based data acquisition devices installed at the point of care (i.e., bedroom, bathrooms, shower spaces, etc.) and associated data processing software. The data acquisition devices will include radio frequency identification (RFID) readers so that the identification badges of the individual staff member will be registered before and after entering a space to provide care or services to a resident.

### **Shannon Pirie (FAST), Design Build, \$5,000**

The art and science of 'making' is an unparalleled teaching and learning method most often used in architectural education. This hands-on approach is what propels design studios in traditional architecture schools around the world. The objective of this design-build project is to give our students a unique hands-on learning experience. The first half of the term will consist of student-teams creating a step-by-step virtual build of a portion of a residential wall, floor, and roof assembly. Given a simple elevation and section drawing, students will have to research the required parts (i.e. 2x4s, 2x6s, framing nails, roofing

nails, window unit, shingles, siding, sheathing, vapour barrier, etc.) to build a 48" section of their assembly. Once their kit of parts is determined, teams will use appropriate drawing software, to develop storyboards that detail the construction process and sequencing of their assembly. In the 12th week of the term, the actual construction of the assemblies will take place in one of Sheridan's parking lots. By applying their knowledge of building science and construction drawing production to a physical outcome that is real, tangible and interactive, they will gain an invaluable appreciation for what they typically only see on paper. This will be their sole opportunity to translate the lines, dashed or otherwise, from drawing to built form.

**Brandon McFarlane (FHASS), Integrating Adult Colouring into Post-Secondary Curriculum to Enhance Mindfulness and Creativity, \$5,000.**

This project explores the pedagogic potential of adult colouring to enhance mindfulness and creativity. Publishers and journalists have uncritically heralded the mental health and cognitive benefits of adult colouring by comparing colouring to meditation and art therapy while peer-reviewed research has proven art therapy activities such as visual thinking, drawing, music and photography enhance mindfulness and creativity there is no corresponding research verifying the benefits of adult colouring. The proposed research designs and tests teaching strategies that use adult colouring to develop mindfulness and creativity skills in a post-secondary setting. In doing so, the research will offer valuable and innovative contributions to the Sheridan community and the scholarship of teaching and learning.

**Kathleen Hearn (FAAD), Youth Culture, Media, Portrait Making and Landscape, \$10,000**

I intend to produce a short video and large scale photobased works that focus on street rollerblade and hip-hop dancer youth culture in St. Louis, Senegal. The work is intended to serve as a poetic portrait of their (the youth participants) relationship to their cultural circumstance and landscape while documenting their street performances. This project is a significant development in my research on youth culture, media and locationality, focusing more deeply on portrait and landscape. The aim of the project is both empowerment through visibility and acknowledgement of the street youth culture in Senegal as well as a placing a critical and reflective lens on their and the viewers cultural circumstance. This project is the forth in a series of international projects that look at youth culture within a specific cultural context, which began in Argentina in 2013, Cuba 2014/15 and in progress works from Iceland in 2015 and my recent residency in Senegal this past fall which sparked this project.

**Amin Ghobeity (FAST), Development of Controllers for Renewable Energy Systems, \$10,000.**

Development of a hybrid energy system, and an automation control system for the optimal operation of a hybrid renewable energy system is proposed. The existing facility in the Sheridan College's Integrated Energy Lab System (IELS) Lab includes several conventional and renewable energy systems such as a 4-kW solar photovoltaic system, two solar-thermal energy systems, a 1.2 kW hydrogen fuel cell stack, a geothermal energy system, hot water storage tanks, and an electric water heater. In this project, the design and development of a small-scale water heater powered by renewable energy systems is proposed. More specifically, the proposed project aims at developing a control system (hardware as well as software development) to hybridize an electric water heater with a flat-plate solar collector and a geothermal water heater. All three systems, i.e., the electrical water heater, the geothermal energy system, and the solar-thermal collectors already exist in Sheridan College's IELS Lab, but operate independently of each other. The goal of this project is to implement a control system to hybridize these three systems, and thereby develop a more efficient and automated energy system.

**Mark Orlando (FAST), Ida Gianvito (Student Affairs), Jacinda Frazer (Student Affairs), Vicki McAllister (Student Affairs), Wellness Portal, \$10,000**

Mental wellness is an imperative for both students and employees, as reflected in the Mental Health Commission's reports, Making the Case for Investing in Mental Health in Canada and Interim Report on the Implementation of National Standards for Psychological Health and Safety in the Workplace.

Based on research into the seven dimensions of wellness, this portal would serve as the first point of contact for individuals interested in learning about the seven dimensions and, more importantly, give them the opportunity to see what Sheridan has to offer to support individuals on their path of wellness. Designed and built entirely by students, this PoC, will effectively demonstrate the interaction with and possible uses of a wellness portal.

**Rafael Santos (FAST), Carbon-Sequestering Fertilizer: Trapping CO<sub>2</sub> in Agricultural Soil, \$10,000**

There is an urgent need to tackle climate change and reduce global carbon dioxide (CO<sub>2</sub>) emissions. Carbon capture through mineral carbon sequestration is deemed as one of the most effective decarbonisation approaches, as it is how CO<sub>2</sub> is captured naturally. However, it has been a challenge to industrialize this method, as economically feasible large-scale process technologies have not yet been developed. An alternative approach is to perform ambient weathering of minerals. In this case, the minerals are simply exposed to air, extracting CO<sub>2</sub> from it and permanently storing it. The objective of this project is to assess the suitability of ambient weathering for large-scale carbon sequestration in Ontario, its compatibility with the agricultural sector, and the feasibility of this approach. The immediate goal of this innovative project is to study how much and how fast CO<sub>2</sub> can be stored inorganically in CO<sub>2</sub>-capturing mineral-amended fertilizers. In the long term, the effect of mineral additions on crop growth and quality, upon large-scale application, will be evaluated, and operational costs will be quantified.

**Michael McNamara (FHASS), Nathaniel Barr (FHASS), Patrice Esson (FHASS), Does Creativity Training Make a Difference?, \$10,000**

Sheridan has sought to infuse the power of creativity into every aspect of the Sheridan experience through its Institute of Creativity and Creative Campus and offers both its degree and diploma students formalized training in Creativity and Creative Problem Solving (CPS). To date, over 900 students at Sheridan have taken at least one course in creativity and CPS. Additionally, Sheridan also offers its degree students the "Sheridan Board Undergraduate Certificate in Creativity and Creative Problem Solving", which emphasises, amongst other things, proficiencies in the Thinking Skills Model (see: Puccio et al., 2012). Given this considerable investment, it is important to assess whether Sheridan's training in the Thinking Skills Model as a model for Creative Problem-Solving does lead to improvements in one's creative capacities or creative performance. However, as yet, we are unable to substantiate and validate the anecdotal evidence of this relationship because the question has not yet been explored empirically or with methodological rigor at Sheridan. The purpose of the proposed study is to test the impact of CPS training on one's creative capacity. Specifically, we intend to examine the impact of a 14 week introductory course, "Principles of Creative Problem Solving," on a student's creative capacities as measured by: 1) verbal and figural scores on the Torrance Test of Creative Thinking; the most widely accepted assessment instrument for measuring creativity; and 2) attitudinal changes (openness to new experience, independence of judgement, self-confidence, and attraction to complexity, aesthetic orientation, and risk-taking) as measured by survey scores.