

## Sustainability Projects Fund Application

**Project Title:** CodeJam @ McGill (Central Theme: Energy Sustainability)

**Budget Requested:** \$2,000

**Date Submitted:** 7th October 2013

**Applicant/Project Leader:** Sasithra Thanabalan

### Contact Information:

Last Name: Thanabalan

First Name: Sasithra

Email: [ecsess.vpexternal@mcgilleus.ca](mailto:ecsess.vpexternal@mcgilleus.ca)

Daytime Phone: 514 - 632 - 3692

Role (Undergraduate, Post-Graduate, Staff, Academic):

Faculty/Unit: Electrical and Computer Engineering, Faculty of Engineering

**Project theme(s):** Academics, Community, Energy

### Project Group:

Electrical Computer & Software Engineering (ECSESS) Code Jam Committee

Sasithra Thanabalan ([ecsess.vpexternal@mcgilleus.ca](mailto:ecsess.vpexternal@mcgilleus.ca))

Lucy Zheng ([lucy.zheng@mail.mcgill.ca](mailto:lucy.zheng@mail.mcgill.ca))

Daniel Renga ([daniel.renga@mail.mcgill.ca](mailto:daniel.renga@mail.mcgill.ca))

Hadi Sayar ([hadi.sayar@mail.mcgill.ca](mailto:hadi.sayar@mail.mcgill.ca))

Thuy - Anh Le ([thuy-anh.le@mail.mcgill.ca](mailto:thuy-anh.le@mail.mcgill.ca))

### McGill Energy Project Representatives

Bryan Zimmerman ([bryan.zimmerman@mail.mcgill.ca](mailto:bryan.zimmerman@mail.mcgill.ca))

Trevor Braun ([trevorbraunmail@gmail.com](mailto:trevorbraunmail@gmail.com))

Alexander Ostrow ([alexander.ostrow@gmail.com](mailto:alexander.ostrow@gmail.com))

## I. Project Overview

### ***Project summary:***

The annual CodeJam at McGill is a 48 hour programming competition, run by the Electrical Computer and Software Engineering Student Society (ECSESS) with the goal of developing software solutions to a pre-defined real life problem centered around an all encompassing theme.

### ***Objectives:***

- Build awareness about the centralized theme in a software setting.
- Encourage innovation and creativity in software development.
- Get participants to engage with other like-minded, similarly motivated individuals.

### **Outcomes:**

- Build a community of talented and enthusiastic software developers.
- Promote career opportunities for all participants by giving them a low-stress platform to showcase their abilities..
- Create an awareness of ECSESS and its purpose.

### **Project eligibility:**

This year, after conversations with the McGill Energy Project (MEP), ECSESS opted to theme the event around energy sustainability. Given that the event is held on campus, sees over 125 students participate, and has professors help as judges, this theme will get a lot of people on campus thinking about sustainability.

However, this new theme is quite different from what was done in past years, where sponsors (e.g. Morgan Stanley) decided what the students would work on (e.g. financial trading apps). This year the sponsors will once again actively participate in the development of the challenge question, but a representative of the MEP will also be at the table.

The purpose of this application is to ensure that the voice of the MEP and the sustainability interests of ECSESS has financial backing. Giving them more power at the table when it comes time to shape the challenge question. With SPF funding on the table (a contribution equivalent to a presenting sponsor), we intend to make the following criteria non-negotiable.

- The question must be focused on somehow improving sustainability via energy (e.g. enabling new renewable sources, or improving energy efficiency)
- The McGill campus must be used as a living-lab for the challenge question. (This will be made easier since Pulse Energy is a sponsor, and they are opening-up their data & web app for use in the Code Jam). Thus, while the challenge question need not necessarily be focused on saving energy on campus, it must nonetheless be applicable to the McGill community and use the campus to prototype/develop the idea.

***If for whatever reason these criteria are not met, we will return the money to the SPF.***

**Timeframe/Milestones:** (Key dates only - for complete timeline see appendix)

October 20th - Begin meetings to develop problem for the competition. (3 to 4 general meetings with sponsors and organizing panel).

November 15th - 20th - Code Jam!

### **Performance indicators:**

- Number of participants (teams).
- Relation between solutions presented and the theme of sustainability.
- Variety and impact of solutions developed.
- Feedback from participants.

### **Sharing the outcome:**

- Awards ceremony during which winning teams pitch their idea to other participants and interested audience members.
- Company pitches where teams are given the option of presenting their innovation to the companies that make up our main sponsors.
- Publicity through the ECSESS LiveWire Newsletter and other engineering and McGill related publications that are invited to attend the awards ceremony.

### **Stakeholders & Contributions:**

- ECSESS Council
- McGill Energy Project - Overall collaborator
- Ericsson Canada - Presenting\* Sponsor
- Kronos Inc. - Presenting Sponsor
- Morgan Stanley - Presenting Sponsor
- Pulse Energy - Core\* (API) Sponsor
- Shopify - Core (API) Sponsor
- Haivision - Supporting\* Sponsor
- Professor Brett Meyer - ECSE Academic Faculty Representative
- Professor Joseph Vybihal - Computer Science Faculty Representative

\* See appendix for description of various sponsors' roles.

### **Others affected:**

- **Computer Science Undergraduate Society (CSUS)** - A good percentage of CSUS students make up the participants of CodeJam. They have expressed excitement at the introduction of an all encompassing theme of sustainability.
- **Engineering Presidents' Meeting** - Presidents of each engineering department in McGill are also excited at the introduction of a theme that the EUS has been trying to raise awareness for as well.
- **Past participants** - Enthusiastic that there will be more direction with the introduction of this theme which is an issue that more software companies need to address.

## **II. Project Implementation**

Tasks and Responsibilities: ·

<b>Type of Activity - Task</b>	<b>Estimated Time Required</b>	<b>Group Member in Charge</b>
Sponsorship Acquisition	3 months	Sasithra and Trevor
Problem development	1.5 months	Daniel and Alexander
Food and Catering	1.5 months	Thuy - Anh Le
Additional Logistics	1 month	Hadi Sayar

### III. Financials

**Critical Date:** First week of November.

#### Detailed expenses:

Expense Description	Estimated Cost
Sponsorship packages	\$ 50.00
USB Keys	\$ 100.00
Promotional material	\$ 100.00
Food (Participants and judges)	\$ 5,000.00
First Place Prize	\$ 1,000.00
Second Place Prize	\$ 500.00
Third Place Prize	\$ 250.00
Gifts for Judges	\$ 100.00
<b>TOTAL</b>	<b>\$7,100.00</b>

**Note:** All prizes are to be divided amongst up to 4 group members. Also note that budget is an estimation based on previous years.

#### Detailed revenues:

Revenue Source	Amount Requested	Confirmed?
Sustainability Projects Fund	\$ 2,000	No
Presenting Sponsors	\$ 6,000	Yes
Core Sponsors	\$ 2,000	Yes
Supporting Sponsors	\$ 500	Yes
Registration	\$ 1,500	No

**Note:** The ECSESS annual operating budget come from all sponsorship proceeds made from Code Jam. It is for this reason that, should the aforementioned challenge question criteria not be met, the ECSESS would return the SPF money.

### IV. Additional information:

See funding package attached.

## Appendix

### *Detailed timeline*

#### ***May - July 2013***

- Formation of committee and delegation of tasks (sponsorship and logistics).
- Meeting with McGill Energy Project representatives - defined level of collaboration and developed first draft of sponsorship package.
- Determined all-encompassing theme of the event to be Sustainability efforts.
- List of potential sponsors formulated.
- Feedback from previous editions of the CodeJam were compiled and evaluated.

#### ***August 2013***

- Delegation and distribution of sponsorship package.
- Follow up and address questions from potential sponsors.
- Update website and other promotional material.

#### ***September 2013***

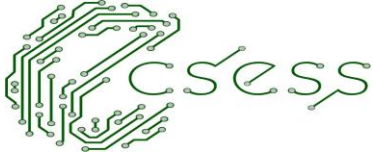
- Follow up on potential sponsors.
- Finalize sponsors.
- Develop plan for food and catering.
- Commence development of posters and promotional material.

#### ***October 2013***

- Distribute promotional material.
- Oct 20 - Develop problem for the competition. (3 to 4 general meetings with sponsors and organizing panel).
- Oct 25 - Registration period opens.

#### ***November 2013***

- Nov 1- 15 - Registration continues. Food, logistics and miscellanies finalized.
- Nov 15 - CodeJam Commences (Problem defining, Q&A sessions, meeting sponsors and other participants).
- Nov 16 - 17 - Programming takes place.
- Nov 22 - Final judging meeting.



**Electrical, Computer & Software Engineering Student Society (ECSESS)**

# **Code Jam @McGill**

**In collaboration with the McGill Energy Project**

**Theme of event: Sustainability**

**2013-2014**

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## Introduction

The Code Jam @ McGill is a 48-hour programming competition where student programmers work as a team to develop solutions to real-life problems, fueled by pizza, energy and creativity. This is one of the biggest events organized by the Electrical, Computer and Software Engineering Student Society (hereafter referred to as ECSESS). ECSESS is an organization consisting of student representatives chosen by the undergraduate student body. It has hosted Code Jam @ McGill with great success since the event's introduction three years ago. The previous edition drew 129 participants, pictures are available on our [website](http://www.mcgillcodejam.com) (<http://www.mcgillcodejam.com>), and this number is expected to grow with the introduction of two new concepts.

Changes in the event this year include the following:

1. The Code Jam will be organized in collaboration with the McGill Energy Project, and there will be **an all-encompassing theme of sustainability**. The main challenge-problem will be devised with this theme in mind.
2. There will be **an Applied Programming Interface (hereafter referred to as API) category of sponsorship**. Companies are encouraged to sponsor the event with their working APIs. Students may then use the APIs to formulate their solutions. There will be separate awards for this purpose, as is the case with most Code Jam style events. Further details will be given.





## McGill Energy Project

The McGill Energy Project (hereafter referred to as MEP), is a collaboration of students, faculty, and non-academic staff working to drive McGill's energy system towards a more sustainable future. Together, they have been connecting the different sections of the University, drawing on a wealth of institutional brainpower, and using an innovative educational model to find energy solutions for their campus.

In less than two years, this student initiated organization has built strong partnerships with McGill's Department of Utilities and Energy Management, Office of Sustainability and Residences. Starting with a University-funded student-executed situational analysis, which surveyed over 40 major stakeholders, the MEP identified key energy-savings opportunities on campus. It then framed these opportunities as applied student research projects, where students use for-credit hours and collaborate with faculty and staff members to work on a solution. They have targeted potential savings in residences buildings, laboratories, and in the steam and chilled water networks on campus. Substantial reductions are on the table, but the project's scope doesn't end with savings at McGill. The MEP believes that by giving students the experience of transforming their campus' energy system, they will graduate with the skills and confidence needed transform the larger systems they encounter outside the University walls.

The MEP is very excited to be collaborating with ECSESS on Code Jam @ McGill. It believes the event will be a great opportunity to get students thinking about sustainability and energy in a fast-paced, technology-driven way. The MEP will assist ECSESS with the event by drawing on its network of resources on campus, advertising to students and potential sponsors, and helping devise a fun and relevant challenge-problem.

## How it Works

### Duration

The Code Jam will last for **48 hours**. There will be a **Problem Statement Session** which will run for approximately an hour and a half before the Code Jam during which participants will be presented with the challenge-problem, and will be allowed to ask questions. Participants are not allowed to ask questions about the challenge-problem at any other time throughout the course of the event. Participants must **submit their solution within the said 48 hours**.

## Environment

Participants can choose the programming language with which to develop their solution. **Participants may also choose to use any of the APIs provided or choose to not use any at all.** Any dependencies must be clearly stated and be freely available. Participants may be awarded bonus points for using different environments, such as running their program off the BIOS.

## The Challenge-Problem

The problem statement, describing the challenge-problem, will be revealed **one hour and a half** before the start of the contest which will be the only opportunity for students to pose questions. It will be available online throughout the competition. The problem statement will be in the format of a PDF file.

## The Team

Individuals or teams up to 5 will be able to participate. The individual or team must register before the competition. **Teams cannot be changed during the competition.** The awards will be split equally among the officially registered team members. Only McGill University undergraduate students are allowed to participate. Members of the organization committee will not be allowed to participate.

## The Prizes

There is a **Grand Prize of \$1000** for the winning team as well as an **invitation to present their solution at each sponsors' company.** There is a second prize of \$500 and a third prize of \$250 as well as other miscellaneous prizes. Sponsors who provide their APIs to be used will be given the option of providing special prizes for the use of their API based on rubrics pre-determined by said company (we kindly request to be given a full description of these awards, for our records).

## The Participant Registration Fees

There is a fee of \$10 for each member of the team. This fee will be used to help cover the costs of food and drinks during the 48-hour competition.

## The Website

There is a website currently available at [www.mcgillcodejam.com](http://www.mcgillcodejam.com) that details the event. It is the location where participants can get the latest updates during the competition.

## The Equipment

Participants can use any desktop or laptop they wish. There are no restrictions. Participants can also use remote servers and resources. Some students have previously brought their own personal desktops to school.

## The Judges

There will be a total of 6 judges: two from McGill University, three from our sponsors and one from ECSESS. Judging will take place the day after the competition ends.

## The Judging Criteria

The official judging criteria will be formulated at the time of the problem definition. As an example, the following criteria will be considered, among others:

- Accuracy of the solution presented in addressing the problem.
- Innovation, scalability, and elegance. (Algorithms, data structure, language choice, design, etc.)
- Clarity of code and efficiency of solution. (Well documented code, manual, etc.)

**Additional API judging :** Each company providing their API for development will be required to create their own judging rubric to select teams with the best use of their API (most creative use, most comprehensive use, scalability and elegant use of API etc.)

## Language Restrictions

Students may write any part of their code (variables, class names, etc.) and/or documentation in English or French.

## Schedule

The event will take place from the 15<sup>th</sup> to the 17<sup>th</sup> of November. Companies will receive an update on those dates as soon as the information becomes available. The following figure shows a tentative weekend schedule.

Time	Friday	Saturday	Sunday	Monday	Friday	
8:00 AM		Coding Competition Continues				
9:00 AM				Judging Period Begins		
4:00 PM	Registration period					
5:00 PM					Judging Period Ends	
6:00 PM	Problem Statement Session					Awards Ceremony
8:00 PM	Coding Competition Starts			Coding Competition Ends		

Tentative weekend schedule

## Sponsorship

### Why sponsor? Exceptional company exposure to students!

- Given unparalleled access to the top students in the Electrical, Computer and Software Engineering and Computer Science departments.
- Each sponsorship opportunity is outlined in the following table:

## Sponsorship Tiers

### Presenting Sponsor (\$2,000 in value)

- Limited to 3 sponsors
- Participate in the entire process of the Code Jam from the problem creation, to the judging and prize giving.
- Most exposure to the participants and the organizers

### Core Sponsor (\$1,000 in value)

- Opportunity to provide an API to gauge the compatibility of participants to the company
- Participate in the event without dedicating personnel to the planning and judging processes

### Supporting Sponsor (\$500 in value)

- Provide sponsorship in either a monetary or non-monetary form
- Participate in the event without dedicating personnel to the process with a similar amount of exposure

**Each tier and their benefits are outlined in the table in the next page:**

<b>Benefits</b>	<b>Presenting Sponsor (\$2,000)</b>	<b>Core Sponsor (\$1,000)</b>	<b>Supporting Sponsor (\$500)</b>
Formulate challenge-problem to be posed, in collaboration with MEP	✓		
Participate in the judging of the competition	✓		
Present problem during the opening ceremony	✓		
Presentation about company during opening ceremony	✓		
Present main prizes to winners	✓		
Winning teams present their solution at the sponsor's office	✓		
Provide a comprehensive API developed by the sponsor		✓	
Provide secondary prizes (not greater than \$500) for the use of sponsor company provided API (best use, creative use etc.)		✓	
Table a booth during 2-hour registration period	✓	✓	
Company logo displayed on official CodeJam Website	✓	✓	✓
Company logo displayed on all promotional material (poster, event banner etc.)	✓	✓	✓
Provide non-monetary items to be distributed (merchandise, food, memorabilia etc.)	✓	✓	✓

Sponsorship tiers

## Thank you

On behalf of the entire ECSESS Council and the McGill Energy Project, I would like to thank you for taking the time to read about the Code Jam @ McGill. If you require additional information, please do not hesitate to contact us. Feel free to visit our website at [www.ecsess.com](http://www.ecsess.com) as well!

## Organization Committee

Chair: Sasithra Thanabalan, Vice-President External

MEP Collaborator: Marc-Etienne Brunet, McGill Energy Project Coordinator

Nadine Hariri, Vice-President Internal

Alison Van der Wee, Vice-President Communications

Shaun Hamelin-Owens, Vice-President Administrations

### Additional Committee Members:

Hadi Sayar

Daniel Renga

Lucy Zheng

Thuy-Anh Le

Bryan Zimmerman (MEP)

## Contact Information

Sasithra Thanabalan

Vice-President External, ECSESS

[ecsess.vpexternal@mcgilleus.ca](mailto:ecsess.vpexternal@mcgilleus.ca)

Marc-Etienne Brunet

McGill Energy Project Coordinator

[energyproject@mcgill.ca](mailto:energyproject@mcgill.ca)

**Electrical, Computer and Engineering Student Society (ECSESS)**

**Lorne M. Trottier Building Room 1060**

**3630 University Street, Montreal, Quebec**

**H3A 2B2**