

# Report to the Canadian Society for Chemical Engineering

## Student Chapter Merit Award Application – 2016

### McMaster University: Chemical Engineering Club



Prepared by: Courtney Picard and Ryan J. LaRue  
President and Vice President (2015-2016)

McMaster University  
CSCHE Undergraduate Chapter  
1280 Main St. West  
Hamilton, ON L8S 4L8

Awards Manager  
Canadian Society for Chemical Engineering  
130 Slanter Street, Suite 550  
Ottawa, ON K1P 6E2  
[awards@chemist.ca](mailto:awards@chemist.ca)

Re: 2016 CSCHE Student Chapter Merit Awards Application

The McMaster University Undergraduate Chemical Engineering Club (Chem Eng Club) would like to express its interest in applying for the 2016 Student Chapter Merit Award. The Chem Eng Club is the CSCHE Student branch at McMaster University, and is a club of 21 dedicated student executives (Appendix A) who volunteer their time each week to plan and run a variety of academic, social and community events.

The Club is one of the most energetic and active faculty clubs at McMaster University. The goal is to liaise between the student population and the faculty, promote volunteering and local involvement, provide students access and information about the CIC and CSCHE chapters, provide networking opportunities, help ease the transition of second year students into the program as well as offer academic support to all undergraduate chemical engineers. This year, the club also helped sponsor a new student-run club, "The McMaster Brewing and Distillation Club" to help run a brewery and distillery tour.

Many events are run throughout the school year which meet all three of the club's pillar focuses: academics, social and community events. These activities are described in Appendix B. The club also increased its online presence this year with updated social media accounts such as an Instagram account (@macchemengclub) and a more active Twitter account (@Mac\_ChemEngClub). Both of these accounts were used to showcase student awards and achievements, as well as advertise club events.

Included in the following report is an outline of the various club activities, executives, merchandise and student space upgrades which took place in the previous year. A lot of the events that are run annually are club staples, but numerous new events were added after gauging student interest. A survey was conducted in the fall of 2015 to engage students in Club activities, and to see what the students wanted to see from Executive this year. The Club also aimed to run joint events with the Chemical Engineering Graduate Society and other faculty clubs in order to facilitate camaraderie with other student groups. Continuity in the club was encouraged through a potluck transition meeting featuring the incoming and outgoing executives; updates to the President's Manual were also made, which is passed on to the new president each year.

I am very proud of the efforts and initiative of this year's Club members and their dedication to running events that are representative of our diverse student population. All members showcased great dedication to club as well as innovation to enhance the Club's presence and provide services to the student population.

I would like to thank you for your consideration of the McMaster Chem Eng Club for the CScE Student Chapter Merit Award. Please feel free to contact me if you have any questions about our application. We look forward to hearing from you soon!

Courtney Picard  
Club President 2015-2016  
Vice-President 2014-2015  
VP Social 2013-2014

## Appendix A: Club Executives

The McMaster Chemical Engineering Club consists of 21 dedicated student volunteers who meet weekly and plan a large variety of events throughout the year for the undergraduate chemical engineering population. This year's club members are as follows:

Position	Name
President	Courtney Picard
Vice President	Ryan LaRue
Treasurer	Cristina Alfano
Administrator	Pirasan Rajagobal
Productions Coordinators	Jenny Chen, Kushal Panchal
Social Coordinator	Alexandre D'Souza, Shaharyar Virani
Webmaster	Jesse Z. King
Sports Representative	Jesus Flores
Volunteer Rep	Eva Mueller
McMaster Engineering Society Rep	Caitlin McNeil
2 <sup>nd</sup> Year Class Reps	Rebecca Lariviere, Jonathan Vincent
3 <sup>rd</sup> Year Class Reps	Matthew Ferguson, Kenneth Choi
Upper Year Class Reps	Daniela Corsetti, Steven Toniolo
CSCHE Conference Reps	Joyce Lam, Gerard Bruin, Jacqueline Chau



**Figure 1: The 2015-2016 McMaster Chemical Engineering Club executives.**

## Appendix B: Events

### Academic Events

#### Peer Tutoring

**Weekly**

This past year, the Chemical Engineering Club saw an inherent need for additional student mentorship when relating to chemical engineering courses. Given our strong upper-year students, the executive team, led by the Club vice-president, launched a new weekly peer tutoring session to a) provide aid to students struggling with course material, assignments and tests and b) to help student tutors solidify their chemical engineering knowledge and review prior course content. Called the “Chemical Engineering Drop-In Center, sessions were held for two hours per week in the undergraduate student space with an average attendance of half a dozen people, with a range of one to twenty students per session. The Department of Chemical Engineering graciously provided the students and tutors with coffee and cookies—an incentive to help other students and “brain food” for those trying to learn. During the second semester of school, a professor supported our initiative by scheduling his office hours during the Drop-In Center, which increased the attendance and meant students could also consult a member of the faculty regarding chemical engineering topics. The success of the Drop-In Center has been demonstrated through several students who have approached executive members and described how helpful the tutoring was to their learning process. These tutoring events are expected to continue to run in the coming year, with increased advertising and new incentives to increase participation.

#### CSCHE Conference

**October 3-7<sup>th</sup>, 2015**

Thirty delegates from the McMaster Chemical Engineering department attended the Canadian Chemical Engineering Conference for 5 days in Calgary, Alberta. The conference provided an opportunity for students to learn about some of the cutting-edge research described in this year’s theme of Shaping Energy Technology for the Future. This year, multiple McMaster students competed in the Robert G. Auld Student Paper Competition; as well many students attended the ENMAX industry tour. The Club president also attended the CSCHE Student Chapter President’s Meeting where discussions dealt with how to increase membership and student awareness of the CSCHE as well as sharing any additional fundraising techniques to allow for a larger group of students having the ability to attend the conference in the future. At the undergraduate student banquet, Spencer Imbrogno was presented with the Robert G. Auld Student Paper Award. Also, the McMaster Chemical Engineering club was awarded Honorable Mention for the Student Chapter Merit Award which recognizes excellence in undergraduate chapter involvement and diversity. Attending this conference is a very popular event, with seats selling out well before the incoming year. Our three student representatives work tirelessly to provide a fun and rewarding trip for all delegates involved.



**Figure 2: McMaster delegates at the 2015 CShE Conference in Calgary.**

### **Departmental Meeting**

**November 11<sup>th</sup>, 2015**

The Club president and vice president attended a faculty departmental meeting to give feedback to the faculty on behalf of the students. This included discussions of program details and improvements, faculty concerns as well as student feedback and any club programs requiring faculty support. Attending these meetings show the chemical engineering students that the club has a commitment to delivering student issues to the faculty and facilitating a dialogue with the department which values the Club's involvement. It can be noted that the Department of Chemical Engineering has an extraordinarily good relationship with the Club, and their unwavering support is highly appreciated by the Club and students.

### **Nuclear Reactor Tour**

**November 27<sup>th</sup>, 2015**

The club organized a tour of the nuclear reactor on campus at no cost to the students—a tour for thirty attendees. There was a very large turnout of 100+ students; as it was a first-come-first-served event, priority was given to chemical engineering students. This event was very successful and provided students with an opportunity to see a different energy technology on campus.

### **CIC Monsaroff Student Paper Night**

**February 11<sup>th</sup>, 2016**

The Monsaroff Student Paper Night was introduced in the 1960's in recognition of Boris Monsaroff, an industrial chemist/chemical engineer and author, who lived and worked in Hamilton for more than 30 years. Mr. Monsaroff played a leading role in the Chemical Institute of Canada (CIC), and maintained a vigorous interest in science and economics, and was deeply concerned with the impact of scientific development on economic and political policies. The Hamilton section of the CIC organized this student paper night in order to foster student interest in developing communication skills and using these skills to transmit knowledge to a general audience. Since its creation, two students from McMaster Chemistry, Mohawk Chemical Technology and McMaster Engineering have gathered in front of interested students, faculty and friends to share knowledge. Students submit a presentation on a topic of their choice, and from these submissions, 2 students are selected from each faculty to make an

oral presentation to their peers, the general public and a panel of judges composed of industry employees and professors. This year's competition was hosted by McMaster Chemistry at East Side Mario's and the two Chemical Engineering competitors were Kushal Panchal and Erik Joy. Erik Joy won the medal as a result of his excellent presentation entitled "*Anterior Cruciate Ligament Reconstruction with Electrospun Eri Silk Fibroin Scaffolds*".



**Figure 3: The Chemical Engineering Competitor at the Monsaroff Speaking Competition.**

### **MacLab Initiative**

**February 22<sup>nd</sup>, 2016**

The McMaster Laboratory Advancement Benefaction (macLAB) Endowment Fund was a project initiated by the McMaster Engineering Society (MES) in 1997, in response to an increasing need to renew and update the undergraduate engineering laboratory facilities. This year, the Chemical Engineering Department requested funding from macLAB to expand and enrich the student laboratory experience. The Chemical Engineering Club worked closely with faculty to prepare the funding request. The proposal was successfully defended and will result in replacing a wastewater analyzer, which will be useful for the incoming water energy technology stream as well as make existing laboratory experiments more accurate.

### **CIC Seminar**

**February 29<sup>th</sup>, 2016**

This year Amy Reckling from the CIC conducted a seminar for club members to outline the benefits of a CIC membership as well as how this membership can aid in extending their networks, knowledge about conferences and career help. In return, this seminar also provided an opportunity to discuss ways for the CIC to become more popular with the undergraduate student population. This event was not particularly well-attended, but equipped members of the Club to further inform other students, and additional literature was made available in the undergraduate study space.

## **Program Info Sessions**

**March 10<sup>th</sup>, 2016**

The Chem Eng Club supported the department by helping with the first year information sessions. This evening was spent detailing information about the program to first year students to help form their decisions for second year program selection. There was a presentation given by two of our students, as well as laboratory and student space tours. Free pizza is advertised to encourage student attendance. This evening also provides an opportunity for the Club to be visible to the potential incoming chemical engineering students. Roughly twenty volunteers from various chemical engineering programs attended and mentored first year students that evening.

## **Community Events**

### **Blood Drives I & II**

**September 29<sup>th</sup> 2015 & January 26<sup>th</sup> 2016**

The Chem Eng Club participated in a semi-annual blood drive. Volunteers registered for time slots and to encourage participation, all donors were given free entrance to the Smoker events. Both dates saw great turnouts, with 10 and 20 chemical engineering students participating each semester, respectively.

### **Charity Hot Yoga**

**Monthly, September to March**

A social and athletic event is run at the local hot yoga studio “Moksha Yoga”, which occurs on the 3<sup>rd</sup> Friday of each month. Entrance into the studio is a minimum of \$7 donation to a local charity that changes each month. Each event saw approximately ten students attend, and is quite popular within the chemical engineering community.

### **Adopt-a-Family**

**December 2015**

The Chem Eng Club and the Department of Chemical Engineering joined together to raise money and purchase gifts for a local Hamilton family in need around Christmas. Class representatives collected change from students during classes, and all proceeds were combined to purchase items from the family’s wish list.

### **BASEF Judging**

**March 31, 2016**

The Bay Area Science and Engineering Fair is a large, long-running, science and engineering competition for elementary and secondary-school students in the Hamilton, Ontario area. Awarding over \$200,000 in scholarships and prizes in 2016, this fair is an incredible venue for young scientists and engineers to express their ideas and creations. The Chemical Engineering Club, in partnership with the Department of Chemical Engineering at McMaster University offered a scholarship to secondary school students for the first time this year—an initiative spearheaded by the Club. \$250 of Club and Department money was offered to a student or students who demonstrated “an outstanding intermediate or senior project demonstrating aspects of chemical engineering, particularly in the fields of biomaterials, polymer science, process systems design, or water and energy systems”. This award was judged exclusively by a representative of the Club who evaluated each project on its science and engineering merit, quality of the project, quality of the student interview, chemical engineering value, in addition to a small holistic component. The recipient of the award—a grade 9 student—created and evaluated a drug delivery system (transdermal patch) for the administration of Vitamin C to cancer patients, avoiding frequent and painful injections.

## **Social Events**

### **Second Year Welcome and Rep Selection**

**September 22<sup>nd</sup>, 2016**

In order to introduce the Chem Eng Club to as many second year students as possible, the Club goes into one of the mandatory second year classes, introduces themselves, and performs the club's rendition of "If I had a Million Dollars", rewritten as "If I were in Chem Eng". After this performance, elections are to elect two second year reps to act as the class's liaison with the Club. The lyrics to "If I were in Chem Eng" can be found in Appendix E.

### **Meet the Profs and Conference Fundraiser**

**September 22<sup>nd</sup>, 2015**

This year, the annual "meet the profs" event to introduce second year students to members of the faculty was done in conjunction with the CSE conference fundraiser at Boston Pizza. Tickets were purchased for \$20, where half of the proceeds go directly to the conference; the ticket included a drink, salad and basic pizza or pasta dinner. Over 30 students attended this event as well as a majority of the faculty.

### **Smoker I & II 2016**

**October 22<sup>nd</sup> 2015 & February 11<sup>th</sup>**

Smoker is a long-standing social event for the Chem Eng Club. It is run to encourage informal interaction between the chemical engineering students and the faculty. This event was run at Boston Pizza for a cost of \$2 per student—unless they had donated blood, in which case entrance was free. There were approximately five faculty members who attended each time, and over 30 students.

### **Non-Denominational Holiday Dinner**

**December 3<sup>rd</sup>, 2015**

This event is the final social gathering of the fall semester and it was held at East Side Mario's. It is an event meant to help students unwind before the exam period. This event also doubled as a food drive for a local food bank, as each attendee was requested to bring a canned food item for donation. Approximately 15 students attended to eat dinner and chat.



**Figure 4: Students enjoying dinner at the Non-Denominational Holiday Dinner event.**

### **Grad vs. Undergrad Dodgeball**

**November 19<sup>th</sup>, 2015**

This event was run in conjunction with the Chemical Engineering Graduate Society, where undergrads and graduate students rented a gym for an hour to play dodgeball and blow off some steam. The cost was \$2 per student to play for an hour, and many of the graduate students were the course TA's!

### **Chem Eng Bowling**

**February 25<sup>th</sup>, 2016**

A survey that was sent out to gauge student interest in events for the Chem Eng Club came back with a request for a Club bowling night. The Club sports rep ran the event at University Lanes at a cost of \$15 per person. That fee included two games and shoes. Five students attended to bowl, and the hope is that next year if the demand is still there this event will run again.

### **Roast the Profs**

**March 24<sup>th</sup>, 2016**

Roast the Profs is the club's most popular event; it is unique to the chemical engineering and is a time when students and faculty poke fun at each other for the sake of the students. Students prepare games and trivia about the professors and this year, the professors ran their own skit "Profs Read Mean Course Evaluations" in the style of Jimmy Kimmel's "Celebrities Read Mean Tweets". Over thirty students and eight faculty members attended the event this year. It is at this point where the new Club is introduced, and the new president makes a small speech.



**Figure 5: Photos from the Roast the Profs event 2016.**

### **Transition Meeting**

**April 8<sup>th</sup>, 2016**

A Club potluck was run where the entry “fee” was a transition report for the incoming Club member for the following year. All current and new Club members were invited and the Club provided lasagna. This provided an opportunity for incoming and outgoing members to discuss any improvements they hoped to make and any important details that were outlined in their transition reports. Many of the incoming members already knew how meetings were run as the club made meetings open to any students that were interested in attending.

### **Chem vs. Civil Bubble Soccer**

**April 9<sup>th</sup>, 2016**

To foster some gentle competition between departments, the Chem Eng Club arranged a game of bubble soccer against civil engineering students. Both clubs donated money to help subsidize the cost of running this event. Students had to pay only \$10 for two hours of bubble soccer. This event was sold through class reps and ran on a sports field on campus. There was a great turn out from both departments, and a total of 20 students attended and played.



**Figure 6: Chem vs. Civil bubble soccer, a friendly competition.**

## Appendix C: Room Dedication and Student Space

This year, a McMaster Chemical Engineering Professor Emeritus, Dr. Cameron Crowe, funded a new room dedicated all chemical engineering students. This has been branded the CSTR (Cam Crowe Student Teaching Room). The Club will be in charge of issuing access to the room through the University key card distributor, as well as a new Club position has been instated to ensure proper care is taken of the room. This room is equipped with tables, white boards, a printer and computers with necessary chemical engineering software such as ASPEN, Visio and BioWin. The Club will be in charge of taking any student suggestions to the faculty for upgrades and any maintenance requirements. It is also the home for all of the Kipling plaques and pranks from previous years. Ongoing negotiations are being made with the Faculty to keep the room updated and to ensure it has everything that the students need.

## Appendix D: Merchandise

Each year, the Club runs two separate t-shirt sales for McMaster Chemical Engineering clothing. In the first semester, sales of the classic chemical engineering shirt designs are run, where a total of 176 classic t-shirts were sold. In the second semester, a design contest was run to determine this year's new design, and the undergraduate students get to vote for the winner. This year's winner was a modified Guinness Logo and 42 shirts were sold. All profits raised through shirt sales was funneled into subsidizing Club events.



**Figure 7: Winning design for the chemical engineering t-shirt 2015-2016**

## Appendix E: Song Lyrics

To the tune of "If I Had a Million Dollars" Bare Naked Ladies

By Jervis Lenon Pereira

1. If I was in ECE (if I was in ECE)  
I'd get shocked all the time (by a 12V DC Power Source).  
If I was in MechEng (if I was in Mech Eng)  
I'd draw you a protrusion (maybe in CAD or Solid Edge).  
If I was in software (if I was in software)  
I'd program a code (an algorithm to switch on a light bulb).  
If I was part of civil, I'd play with rocks...

### Chorus:

I'm a Chemical Engineer, we brew beer in our backyard.  
I'm a Chemical Engineer, extrusion and molding isn't so hard.  
I'm a Chemical Engineer, we could build a refrigerator with Freon.

### President:

(No, not Freon because that has been phased out by the Montreal Protocol.  
It would have to be R134a.)

2. If I was in mechatronics (if I was in mechatronics)  
I'd be so confused (but have fun with my robots).  
If I was in Eng Physics (if I was in Eng Physics)  
I'd develop super powers (like the Hulk or Radioactive Man Spider).

If I was in BTech (if I was in BTech)  
I'd weld you a ball valve (so you can control pipe flow).  
If I was in BEAMS, I'm not here right now...

### Chorus:

I'm a Chemical Engineer, on occasion we know what fugacity is.  
I'm a Chemical Engineer, we deal with big black boxes.  
I'm a Chemical Engineer, we could build a distillation column.

### President:

(We have to make sure that the relative volatility is as far away from one in order for an efficient separation.)

3. If I had taken science (if I had taken science)  
I would learn about enzymes (the type that lives under your bed).  
If I was in Society (if I was in Society)  
I'd be saving the whales (off the coast of Alaska).  
If I was in Management (if I was in Management)  
I'd wear suits all day (making presentations like a boss).

If I was in BEAMS, I'm missing out on today...

**Chorus:**

I'm a Chemical Engineer, we shear our non-Newtonian melts.  
I'm a Chemical Engineer, reducing offset with PID controllers.  
I'm a Chemical Engineer... and I'll be rich!