CHBE Undergrad News

October was an exciting and eventful month.

We launched the **UBC CHBE Snapchat** account and **the chemgineer tumblr**, had our first **Beef & Pizza** of the year, our second **CHBE BBQ**, and a Halloween themed CHBE Social, **CH…BOO! PARTY**. *(page 2)*

Next month will be even better! Check out the **upcoming events** for November on *page 3*, as well as some announcements from your council.

Our fellow CHBE's have also accomplished some exciting things this month!

Scroll down to *pages 4-7* read about:

The *65th Canadian Chemical Engineering Conference*
an interview with Miriam Pang

UBC Chem-E-Car Team's participation in the *Third Annual LNG in BC Conference*
contributed by Tampriye Asawo and Siang Lim

UBC BIOMOD Student Team's participation in the *BIOMOD Competition hosted by Harvard's Wyss Institute*
contributed by Jeffrey Boschman

We're on Snapchat!

We kick-started October by launching our new UBC CHBE Snapchat account! The account was set up to provide quick up-to-date notifications of CHBE going-ons. Be sure to add us if you haven't yet @chbelieve

We have a tumblr!

This blog chronicles life in CHBE in pictures so check it out at thechemgineer.tumblr.com

the chemgineer

Beef & Pizza!

We had our first Beef and Pizza of the year on October 9th. Student s came out to give their profs suggestions and the turnout was so great we ran out of pizza.

3rd Year Students at Beef & Pizza

CHBE BBQ!

CHBE BBQ

On October 23rd we had our second CHBE BBQ. It was a great day for a BBQ and the burgers were a hit. Don't forget to volunteer next time for a free burger!

CH…BOO! PARTY

On October 30th we got out of our lab coats and into some awesome Halloween costumes for the Halloween themed CHBE Social!

Upcoming Events

November 20th: Beef and pizza 11:30am–1:30pm

November 27th: CHBE barbeque 11:30am – 1:30pm

November 28th : UBC engineering open house 10:00am–4:00pm
See the link for more details: http://engineering.ubc.ca/prospective-students/events-and-visits-connects/open-house

…and stay tuned for another CHBE social!

A Message from your Fourth Year Representatives

Upcoming deadlines
November 15th : ring sizing – please see Onjaree, Liam or Ravleen
December 4th: photo submission

A Message from your Sustainability Officers

Sustainability

Compost is coming to the Third Floor! We will soon have tri-recycling bins on the third floor to help reduce garbage.

Safety

-Use the Buddy System or SafeWalk (604-822-5355) to get home safe
-Make sure the exterior doors of CHBE are fully closed when leaving the building after hours
-PPE! Please make sure to wear safety glasses, and lab coats when in a lab. Leave cell phones in your bag.

Want to be a Floor Warden for the Third Floor?
-Help keep the third floor free of hazards
-Learn about fire prevention and safety
-Communicate with emergency services when necessary
-Put in on your resume
-Training takes only 30 minutes!

If you would like to become a Floor Warden please contact the Safety and Sustainability Offices at sustainabilityofficerchbe@gmail.com

65th Canadian Chemical Engineering Conference
~ An Interview with Miriam Pang

This year Miriam Pang attended the 65th Canadian Chemical Engineering Conference in Calgary, AB and we would like to share some of her experiences!

Q: What was the conference like?

The conference lasted for three days and was composed of keynotes from Industrial leaders, and technical programs hosted by PhDs and professors around the world. My most memorable keynote was presented by Judy Fairburn, the Executive Advisor of Cenovus Energy on Innovating Innovations. It was inspiring to see industry dedicating resources on sustainable development around the world. Moreover, the committee dedicated a student program which includes plant visits and student banquets for graduates and young professionals. I attended workshops such as coding with Python and sustainable design hosted by ConocoPhilips.

Q: What was your favourite part of the conference?

I was surprised by the quality of the keynotes. I worked with Dr. Piret last year and it was an honour to attend his lecture on Cellular Therapy Engineering. I actually learned a lot from networking with different professors which was very useful for my Capstone project and my undergraduate thesis. PLUS, free coffee was served every 2 hours, I can't say no to that.

Q: Is there any funding provided by UBC to support student professional development?

Yes! The EUS has two Professional Activity Funding deadlines for conferences every year. Our Industry Reps, Raina and Christina were very helpful during that process. Special thanks to you guys!

UBC Chem-E-Car at the Third Annual LNG in BC Conference
~ contributed by Tamriye Asawo and Siang Lim

Chem-E-Car Team with their poster and prototype

The Third Annual LNG in BC Conference provided a meeting place for exhibitors, businesses, government leaders, and others from the industry to discuss the LNG facilities in BC set to begin operation as early as 2020. This year, the conference included an Innovation Engineering Competition for post-secondary students. The UBC Chem-E-Car team decided to participate in the competition with a poster presentation.

The Chem-E-Car team uses clean energy systems such as hydrogen and metal-air batteries to power a small-scale automobile that competes in the annual American Institute of Chemical Engineers (AIChE) Competition. Therefore, the team envisioned that part of the natural gas extracted in BC could be used in the steam reforming and gas shift reactions to produce hydrogen gas. The hydrogen gas produced can be used in fuelling stations to power automobiles and other equipment, as a replacement to using traditional fossil fuels.

In addition, the hydrogen gas could be transported together with natural gas in the same pipelines, making use of existing infrastructure. Due to the different densities of hydrogen and natural gas, they can be easily separated at the working site.

The competition judges approved the poster and the team was set to present during the conference. With much guidance from some UBC professors, we decided to make a prototype of our idea to show during the presentation. This involved a lot of time and effort from team members to plan and print 3D parts for the prototype. On the day of the competition, the team received good feedback from the judges and other visitors to the booth. We were also able to network with different companies that were present.

There were great ideas from all student teams present at the competition. Therefore, we were pleased to hear about our 2nd place standing amongst all the teams that participated. The team received a certificate and $3000, which will go towards funding for the team.

We would like to thank the Department of Chemical and Biological Engineering, along with the professors for providing support and advice during this endeavour.

UBC BIOMOD at the BIOMOD Competition hosted by Harvard's Wyss Institute

~ contributed by Jeffrey Boschman

BIOMOD is an undergraduate-level competition in the field of biomolecular nanotechnology annually hosted by Harvard's Wyss Institute. Our student team was founded in January 2015, featuring 9 members from various faculties and departments, to participate in this competition in an effort to build lasting opportunities for UBC students to explore nanotechnologies in biological contexts, an area which we felt had, up to then, little presence at UBC. The basis of BIOMOD is to use biomolecular nanotechnologies, which typically utilize materials such as DNA, RNA, and proteins and concepts such as structural DNA and molecular programming, to explore new technologies ranging from molecular robotics to nanoscale therapeutics and biosensors.

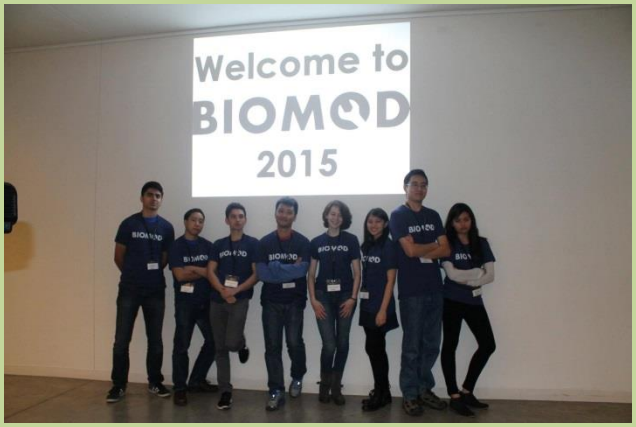
UBC BIOMOD team members

Our team pursued the development of a drug delivery nanostructure using DNA origami and gold nanoparticles with drug carrying liposomes to address issues regarding therapeutic cancer drugs. The problem we identified was that traditional treatments often required multiple drugs or large doses of them to be effective, which in turn caused a lot of side effects from those drugs circulating around the body and destroying healthy cells. Our project utilized the concepts prevailing in BIOMOD to construct a triggerable nanostructure which could simultaneously carry multiple drugs to a targeted site within the body. Treatments utilizing our drug delivery nanostructure could reduce side effects of treatments by focusing the drug at cancer sites under small dosages.

From January 2015 to November 2015 the team independently secured sponsors, lab space, materials and equipment, and experiment reagents while preparing protocols, designs, and research background to tackle the problem. This was completed with very little external help – at most advice from faculty and graduate advisors – which has earned the team many compliments regarding an undergraduate team's ability to proficiently administer their own graduate level research project.

Due to administrative hurdles, the team's pursuit of the experimental portion of the project did not begin until September, and members worked tirelessly to run experiments and obtain results. At the same time, we identified several constraints that resulted from these hurdles. The founding 9 members worked to grow the team, adding 24 new students, in preparation for UBC to achieve continuity in its participation in BIOMOD. This expansion greatly highlighted the interest and consequently the need to create opportunities at UBC to explore developing technologies such as those featured in BIOMOD.

UBC BIOMOD's first year of activities concluded with a successful completion marked by their project presentation at Harvard's Wyss Institute, which earned them a Silver project award and a First Place Audience Choice award. This year's convention featured 30 teams and took place over 2 days from Saturday, October 31 to Sunday, November 1. Each team presented a summary of their problem, their approach, and their project results with a 10 minute presentation that creatively utilized slides, props, and skits to illustrate their key points.



UBC BIOMOD at the BIOMOD Competition

The diversity of both problems and projects presented at the competition was an excellent learning experience. Moreover, the diversity of academic and cultural backgrounds among students present at the competition, which features an increasing number of teams per year, accentuates the growing influence of biomolecular nanotechnology and the driving need for students of all backgrounds to follow and develop their knowledge of developing technologies.

Thank you Miriam Pang, Tampriye Asawo, Siang Lim and Jeffrey Boschman for contributing in this month's newsletter and congratulations on all your accomplishments!!!

If you would like to contribute to a newsletter, contact the Publicity Officers at ***publicity@chbecouncil.com.*** *The CHBE Undergrad News collects and publishes submissions from CHBE undergrads looking for ways to express themselves other than Excel spreadsheets. So if you have a picture, drawing or writing, send them in!*