



Canadian Biomaterials Society
Société Canadienne des Biomatériaux

Quarterly Newsletter

Fall 2017



Letter from the President

Hello everyone,

Happy holidays to everyone! I am pleased to give an overview of the recent activities of the Canadian Biomaterials Society. First, I would like to congratulate Dr. Sophie Lerouge on being our President-Elect and Dr. Kibret Mequanint and Dr. Nima Khadem Mohtaram on being elected to the Board of Directors. I am also pleased to announce the Dr. Marc Gauthier as the new secretary of CBS. We also held a successful CBS Annual Meeting in Winnipeg, Manitoba as detailed in the meeting recap in this newsletter.

Here in B.C., we have established a planning committee for the 2018 Canadian Biomaterials Society Annual Meeting being held in Victoria and we have already confirmed our first keynote speaker and reserved facilities for holding the event. Also, we have reserved hotel and residences – the meeting is being held the long weekend in May so book early! More information can be found at our website: <https://biomaterials.ca/#!/meeting/1-annual-biomaterials-conference/39/>.

Also, please email me if you know of potential sponsors for our event or if you have suggestions for our meeting.

In this newsletter, we include updates from all of our student chapters who have been hard at work planning their upcoming year. They have all been awarded funding to keep up the good work and energize our membership over the upcoming year.

Have a good holiday break!

Dr. Stephanie Willerth, University of Victoria

Annual Reminder – Membership Renewal!

It's that time of year to renew your membership in the Canadian Biomaterials Society! Visit the website to ensure you remain a member.

<https://biomaterials.ca/#!/membership>

We hope to see you at the Annual Meeting of the Canadian Biomaterials Society held on the University of Victoria campus, May 16th-19th, 2018!



Abstract submission opens in early December with a submission deadline of January 31st. We have a special travel award for the top scoring international abstract and we encourage young investigator (faculty – pre-tenure) to indicate this on their abstract as they will be considered for invited talks. We also have confirmed our first invited speakers – Dr. David Mooney of Harvard University, Dr. Zhen Gu from the University of North Carolina, and Dr. Krishanu Saha from the University of Wisconsin.

Call to join the awards committee

Thanks to the generosity of the organizing committee of WBC2016, the Canadian Biomaterials Society now has two new funding opportunities to award to members. We are currently looking for active members (in particular faculty) to serve on a standing Awards Committee for the Canadian Biomaterials Society Meeting. Please contact Dr. Willerth (willerth@uvic.ca) if you are interested.

Final Report on CBS2017

The society held a successful annual meeting with 29 professors, 96 students and 1 corporate member attending. Several awards were given out at the meeting as follows:

ACS Biomaterials Science & Engineering Best Poster Awards

Stephanie Fernandez (McGill University) - Engineering a vascularised encapsulation device for the treatment of type 1 diabetes

Eve Hui (École de technologie supérieure) - Development of an injectable and thermosensitive chitosan hydrogel for the prevention of post-surgical abdominal adhesions

DEPS Best Oral Presentation Awards

Eric Tawagi (University of Toronto) - Immunomodulatory hydrogel microspheres as a sustained release system for angiogenic growth factors

Sarah Kiros (Western University) - Mesenchymal progenitor cell differentiation on electrospun poly (ester amide) fibres for vascular tissue engineering

Burns and Trauma Best Oral Presentation Awards In Burns And Wound Healing

Bingcheng Liu (University of Manitoba) - Surface Tension Guided Hanging-Drop: Producing Controllable 3D Spheroid of High-Passaged Human Dermal Papilla Cells and Forming Inductive Microtissues For Hair-follicle Regeneration

Emily Buck (McGill University) - Comparison of loading methods of an antimicrobial agent in electrospun PLGA fibers

CBS Best Oral Presentation Awards

Judith Ng (University of Toronto) - Identification and characterization of adhesive proteins in freshwater mussels for the development of novel bioadhesives

Wai Hei Tse (Western University) - Development of a biocompatible upconversion nanoparticle model for theranostic applications in anti-angiogenesis

Fei Xu (McMaster University) - Single-step loading of cells into nanofibrous hydrogel scaffolds via reactive electrospinning

Pascal Morissette Martin (Western University) - Human decellularized adipose tissue-derived bead foams enhance the survival and angiogenic response of fibroblasts isolated from human chronic wounds in an in vitro chronic wound model

Introducing the New Members of the Board of Directors

Dr. Kibret Mequanint

I am a Professor in the Department of Chemical and Biochemical Engineering at the University of Western Ontario. My laboratory is active in biomaterials, tissue engineering, and regenerative medicine research for cardiovascular tissues and bone tissues. I have previously served on the CBS Board. CBS has done very well in engaging student chapters. Moving forward, I think the CBS annual conferences requires some work. Over the years, it remained student-focused (in attendance). Participation of Canadian researchers in the fields of biomaterials to CBS meetings is low. We need to improve our communication and outreach to increase Canadian PI participation at our meetings. I also think we need to increase international participation (especially US researchers). As a member of the Board, I hope to work on strategies to engage our research community to increase participation.

Dr. Nima Khadem Mohtaram

Dr. Nima Khadem Mohtaram is currently a faculty member within the Department of System Design Engineering, Program of Biomedical Engineering at the University of Waterloo. He became a board member of CBS in July 2017 and currently serves in different initiatives such as the organizing committee of CBS2018 and also leading the first "Entrepreneurship Clinic" workshop series which will be firstly held in CBS2018 in Victoria, BC. In such workshop, he and his team aim to provide a training platform for Biomaterials trainees where they can learn how to translate an idea to innovation and learn about the pathway of commercialization. He has authored over 28 peer-reviewed research articles in the fields of Biomaterials, Biofabrication, Stem Cells and Neural Tissue Engineering. His main mandate in CBS is promoting initiatives regarding professional career development and leadership skills for Biomaterials trainees.

Update from the Student Chapters

Alberta Student Chapter

We started into the new year with the 2nd BioMat Connect event (March 2017), an academic/industrial mixer about non-academic career opportunities in biotech-related fields and offered a networking platform that brought together academia and industry. Our keynote speaker - Mr. Rob Henderson, President and CEO of BioTalent Canada (Ottawa, ON) provided an excellent overview of Canada's Bio-economy. This plenary session was followed by a panel discussion with 4 successful industry and government professionals with MSc/PhD degrees. The discussion was about the transferable skills required for a successful transition to non-academic career paths. Starting in May, the new team for the academic year was appointed. New strategies were developed to make the student club more professional and offer more services to its members. A new professional newsletter format was first implemented in September and reached almost 500 members. On the 22nd of September, the first free lunch & seminar in fall term was held. Jesse Kadosh, Director of Green Lightening Review, who edited more than 1000 articles in major journals, including Nature and Science, gave a presentation with the title "From idea to expression: Bringing research to a global audience through scientific writing", which attracted more than 90 attendees.

A second seminar is planned in November with Dr. Tredget (Director of the Department of Surgery, University of Alberta), which will focus on a surgeon's perspective on biomaterials for tissue regeneration. It will be recorded and published online. Other activities that helped promote our student chapter were the UofA Clubs Fair (September 2017) and a planned Samosa Sale in November. Currently, we are finalizing our sponsorship package for the next BioMat Connect mixer in March 2018. The topic will be about how to achieve successful collaboration between academia and industry. Building on this year's success, we plan to enhance the networking experience by offering a speed networking session with representatives of the companies participating in the booth. To find out more about our group and events please visit <https://abbiomat.ca/> and connect with us on LinkedIn and Facebook.



British Columbia Student Chapter

In 2017, Laura de la Vega (UVic), Ayse Ince Arkaz (UBC), and Hanadi Alousaimi (UBC) joined the executive committee, allowing for sufficient manpower to organize and run higher quality CBS student chapter events. In 2017, the CBS BC Student Chapter organized a barbecue social event to re-establish our biomaterials community in UVic and UBC, updated our webpage, and created a Facebook account for promotion of CBS student chapter events. In addition, they have established a framework for two events in the 2017-2018 year designed to strengthen both the hard (research, academia) and soft skills (industry, networking) of their members.

Kingston Student Chapter

This past spring, CBS-KSC hosted its first Science Club. Science Club consists of an organized, small group of graduate students and postdocs from different departments attending sessions on a regular basis to critically evaluate a particular scientific topic and discuss potential solutions. The theme of this series was: "Frontiers in Biomaterials and Tissue Engineering". Participants were given a maximum of 1-hour worth of reading to do before the session, to ensure everyone would be able to participate in the active learning portion of each presentation. At the end of the Science Club, we made a poster summarizing the topics that were discussed, which was presented at the CBS AGM in May 2017 as well as the Queen's Chemical Engineering Research Day in September 2017.

The first annual Eastern Ontario CBS symposium was held on May 19th in the Human Mobility Research Centre (HMRC) of Kingston General Hospital and was a huge success. Students who were presenting at the 33rd Annual General Meeting of the Canadian Biomaterials Society were able to practice their presentations and receive valuable feedback from their peers. We also had an outstanding keynote

presentation given by Dr. Isabelle Catelas from the University of Ottawa. Our attendees included undergraduate and graduate students, postdoctoral fellows, principal investigators from a wide variety of departments (chemical engineering, mechanical engineering, electrical engineering, computer science, and biomedical science), from both Queen's University and the University of Ottawa, as well as HMRC employees. We were very excited to have some members from the CBS Ottawa Student Chapter (CBS-OSC) join us at this event, and can't wait to collaborate on more events in the future. The plan is for CBS-OSC and CBS-KSC to alternate hosting this annual research symposium every May before the Annual General Meeting of the CBS.

Following CBS-KSC's focus on industry-related careers this year, our next Science Club will also have an industry focus. The Science Club will be hosted on alternating Tuesdays starting February 13, 2018 from 12:00-1:00 pm, and will run for 6-8 sessions. We will be having Queen's graduate students (two students per session, 30 minutes each) talk about their previous work experience in industry, or past research-industry collaborations. This will allow students to practice their presentation skills, while also teaching the audience (graduate and undergraduate biomedical/chemical engineering students) about the different opportunities and types of work currently occurring in the biomedical industry. We are aiming to make this Science Club more informal and topic-focused than the last one, in the hope to increase student participation and allow more students the opportunity to present their past work experiences. The Kingston executive can be seen below:



Montreal Student Chapter

In June 2017, the Montreal Student Chapter held an event focused on Cell-biomaterial Interactions and Microfluidic Devices. We held this event at ETS. We had Profs. Christopher Moraes and Antonio Nanci who gave us presentations on their new technology for measuring forces at the cellular level, and surface

preparations for improved cell cultures, respectively. These presentations were followed by networking with pizza and drinks, where many more interesting conversations were held. The event is shown below:



In October 2017, the student chapter held an event on Functional Self-assembling Protein-based Materials and Elections. Held at CRCHUM, this event had the recently-appointed Assistant Professor Noémie-Manuelle Dorval Courchesne from McGill University telling us about her interesting work using *E.coli* to produce protein materials on a (relatively) large scale. The chapter then held elections, and had snacks and drinks. The past and present executive along with their faculty advisor are shown below:



Ottawa Student Chapter

The Ottawa Student Chapter is planning to host two seminars and one round-table event during this academic year (September 2017- August 2018). We are also planning to have a joint event with the CBS-Kingston Student Chapter in the winter semester.

A seminar was held in October at the University of Ottawa, with Suresh Gadde, PhD. (Faculty of Medicine - University of Ottawa) as the invited speaker. Dr. Gadde gave a presentation pertaining to nanomedicine and the use of nanoparticles in cancer, atherosclerosis, and infectious disease treatment. The

event was a success with over 30 attendees, as well as a great opportunity to meet a new adjunct professor, Dr. Gadde, and explore his area of research. A Round-Table Discussion is planned for January 2018. Since the round-table discussion event was such a success last year, a similar arrangement is planned this year, with a discussion panel composed of 3 to 4 researchers (including one or two from outside Ottawa – e.g., from Kingston or Toronto). The researchers will give talks about the future of biomaterials and the growing need for researchers in the field. Both undergraduate and graduate students will be invited to the event. Students will be asked to contribute to the discussion throughout the event, similarly to last year event. The student with the most pertinent question(s) will receive a prize (e.g., a \$50 gift card) to highlight his/her participation in the discussion.



CBS Newsletter editorial board

Isabelle Catelas

Todd Hoare

Kathryn Grandfield

Please contact icatelas@uottawa.ca if you want to contribute to our next CBS Newsletter.



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Quebec City Student Chapter

On October 27th, the CBS Quebec City Student Chapter organized its 2nd Symposium entitled “Biomaterials: What are we looking for?”. The event aimed at presenting the academic, clinical and industrial perspectives on biomaterials in the orthopaedic, vascular and skin fields, with the participation of nine internationally renowned speakers coming from Canada and the United States. For this event, we designed a conference format focusing mainly on discussion rather than on classical long lectures followed by few minutes of questions, and we can proudly say that it was a success. Almost 100 participants (students, professors and professionals, mainly from the Quebec Province) attended the Symposium and the discussion panels were incredibly lively and inspiring, even beyond our expectations! An animated networking cocktail with posters presentation concluded the event. For more information about the 2nd Symposium and news on the upcoming events, visit our website at:

<https://cbsqcchapter.wordpress.com/>