



Canadian Biomaterials Society
Société Canadienne des Biomatériaux

Quarterly Newsletter
Spring 2017



Letter from the President

As we look toward the CBS Annual Meeting in Winnipeg next month, I want to take this opportunity to update you on some of the initiatives we have been working on over the course of the year (some of which will culminate in Winnipeg):

- Our new industry-clinician advisory board has been initiated and is leading the organization of a great luncheon workshop in Winnipeg on connecting research to industry, both large and small, and the effective translation of lab-discovered technologies. We are excited about this initiative and hope to see these links grow as we move forward, helping to facilitate building links between some of the ground-breaking research done in CBS labs with Canadian commercialization partners.
- The Board has committed significant additional direct funding this year to the Annual Meeting to enable more of our very deserving student or post-doctoral fellow presenters to receive travel awards to attend the Annual Meeting. Please join me in congratulating the list of travel award recipients for CBS 2017 (announced later in this newsletter) – we look forward to hearing about your research in Winnipeg!
- Our student chapters have been incredibly active during the year (as you have seen if you have visited our website!) in hosting guest speakers, research symposia, and other great events throughout the country. The Montreal student chapter has also taken the lead in recording some of the talks from their symposium day as webinars, which will appear (for members-only access) on the CBS website over the coming weeks. We will be actively continuing this initiative with other student chapters as well as at our annual meeting to give you additional value for your CBS membership. Take this opportunity to learn about some great biomaterials science and engineering, plus issues around biomaterials translation (patents, regulatory affairs), from leading speakers from across the country.
- We are also working on other improvements to our website, particularly with regards to making the Jobs Board a more functional feature for both recruiting and being recruited. Suggestions are always welcome around how to make the website a better resource for CBS members, please contact us if you have ideas.

- The CBS Visiting Scholar Award is still taking applications until April 28. This is a great (and to this point under-subscribed) award that allows a CBS student or post-doctoral fellow member the opportunity to travel to another Canadian lab to execute or initiate a collaborative research project, with up to \$3000 in funding available to pay for travel and accommodations facilitating the exchange. Please consider applying, both to help your research by leveraging expertise from around the country as well as to help build collaborations within the Canadian biomaterials community.
- Finally, it is nearing time to hold our annual elections for CBS President-Elect, Board of Director members, and Student Representative for the 2017-2018 term. Nominations will be collected starting one week prior to the Annual General Meeting in Winnipeg until the close of the CBS AGM (to be held 12:45-2PM on Thursday, May 25 in Winnipeg). If you are interested in getting involved in CBS, please either respond to the call for nomination e-mail (to be distributed mid-May) or attend the AGM in person. Serving as part of the CBS Board is a professionally rewarding opportunity, with the chance to significantly influence the future priorities of CBS.

Finally, I would like to take this opportunity to thank the conference Chair, Malcolm Xing, for all the work he and his team are putting in to make the conference a success. I hope to see many of you in Winnipeg!

Sincerely,

Todd Hoare
CBS President, 2016-2017

Annual Membership Renewal

It is still a good time to renew your membership to the Canadian Biomaterials Society and benefit from discounted rates for registration to the Annual Meeting in Winnipeg! Visit the CBS website to renew your membership:

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

Update on the Annual Meeting of the CBS, held at the University of Manitoba, May 24-27, 2017



We hope to see you at the CBS 2017 in Winnipeg, May 24-27, during the most beautiful season! The conference will provide many opportunities to interact with colleagues from across Canada and around the world.

We have invited 4 outstanding keynote speakers to share their research work:

- Prof. Guillermo Ameer, Northwestern University (High performance polymers for tissue engineering, 8:30am, May 25)
- Prof. Ren-Ke Li, University of Toronto (Stem cell rejuvenation, 2pm, May 25)
- Prof. Jason Burdick, University of Pennsylvania, (Hydrogel 3D printing, 8:30am, May 26),
- Prof. Hongbo Zeng, University of Alberta (Biointerfaces, 2pm, May 26)
- Prof. Milica Radisic, University of Toronto (Organ-on-a-Chip, 8:30am, May 27)

We have also arranged two talks from clinicians on May 26:

- Prof. Jun Wu, Southwest Hospital, China (Biomaterials/Translational Medicine on Burns and Trauma),
- Prof. Richard Kejzer, Health Science Center, University of Manitoba, (Nanoparticles to treat lung diseases).

After their presentations, we will have a Clinician-Industry workshop, where Dr. Tannin Schmidt from Lubris and Dr. Scott Vickers from Medtronic will be joining us for a discussion of translating lab technologies to the market.

Later during the day on May 26, there will be two NSERC workshops (about Discovery Grant and Scholar/Fellowship applications).

All presentations and workshops will be held in the Engineering building on the Fort Gary Campus of the University of Manitoba, located at the south end of Winnipeg on the bank of Red River.

Also, don't miss our traditional banquet at Prairie 360, one of the finest dining places in Winnipeg! The restaurant provides a 360° rotation to see the whole city and enjoy the sunset! The restaurant is located at the Forks, a historical site at the intersection of the Red and Assiniboine rivers.



Make sure you register now and benefit from the early-bird rates! Early-bird registration deadline has been extended until May 1st.

Finally, don't forget to book your accommodation to benefit from discounted rates negotiated specifically for CBS!

Please visit the meeting website at: <https://biomaterials.ca/#!/meeting/1-annual-biomaterials-conference/5>

Travel Award Winners for 33rd Annual Meeting of the Canadian Biomaterials Society

Congratulations to the student Travel Award winners for CBS 2017 in Winnipeg! Join us in Winnipeg to hear more about these award-winning projects:

Emilia Bakaic (McMaster University)
INJECTABLE AND DEGRADABLE POLY(OLIGOETHYLENE GLYCOL METHACRYLATE) HYDROGELS WITH TUNABLE CHARGE DENSITIES: ADHESIVE PEPTIDE-FREE CELL SCAFFOLDS FOR OPHTHALMIC APPLICATIONS

[Dimitria Camasao \(Laval University\)](#)
EFFECT OF CELL SEEDING DENSITY ON THE MECHANICAL AND STRUCTURAL MATURATION OF COLLAGEN GEL-BASED TUBULAR SCAFFOLDS FOR VASCULAR TISSUE ENGINEERING

[Karen Chan \(University of British Columbia\)](#)
A PEG-PEPTIDE CONJUGATE CAN CONTROLLABLY POLYMERIZE IN BLOOD TO INCREASE CLOT ADHESION

[Francesco Copes \(Laval University\)](#)
PLEIOTROPHIN/HEPARIN-MODIFIED TYPE I COLLAGEN GELS FOR IMPROVED RE-ENDOTHELIALISATION

[Laura De la Vega Reyes \(University of Victoria\)](#)
POLYCAPROLACTONE AS BIODEGRADABLE POLYMER FOR THE FABRICATION AND IN VITRO RELEASE STUDIES OF PURMORPHAMINE-LOADED MICROSPHERES TO ENGINEER NEURAL TISSUE

[Tsekoura Eleni \(University of Alberta\)](#)
MODIFICATION OF RAT SKULL PERIOSTEUM AND BONE-DERIVED CELLS USING NON-VIRAL POLYPLEXES

[Maxime-Alexandre Ferko \(University of Ottawa\)](#)
EFFECTS OF METAL ION-INDUCED OXIDATIVE STRESS ON INTERLEUKIN-1BETA PRODUCTION IN MACROPHAGES IN VITRO

[Tim Tian Han \(Western University\)](#)
DEVELOPMENT OF A DYNAMIC CULTURE PRE-CONDITIONING STRATEGY FOR ADIPOSE-DERIVED STEM/STROMAL CELLS ON DECELLULARIZED ADIPOSE TISSUE BIOSCAFFOLDS

[Tao Jiang \(McGill University\)](#)
BIOPRINTING OF ALGINATE/GELATIN AS TUNABLE COMPOSITE HYDROGELS DIRECTING MULTICELLULAR TUMOR SPHEROID FORMATION

[Michael Lagowski \(University of Toronto\)](#)
INFLUENCE OF FLUORINATED DIVINYL URETHANE MONOMERS ON RESIN COMPOSITE CHEMICAL BIOSTABILITY AND PHYSICAL PROPERTIES

[Dibakar Mondal \(Western University\)](#)
STRENGTH AND BIOCOMPATIBILITY OF POLYCAPROLACTONE-BOROPHOSPHOSILICATE HYBRID BIOMATERIALS FOR BONE TISSUE ENGINEERING

[Pascal Morissette Martin \(University of Western Ontario\)](#)
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

[Muhammad Rizwan \(University of Waterloo\)](#)
HYBRID CROSSLINKING OF GELATIN METHACRYLATE HYDROGEL WITH HIGHLY TUNABLE STIFFNESS AND DEGRADATION

[Gad Sabbatier \(Queen's University\)](#)
DYNAMIC STIMULATION OF ALGINATE-BASED HYDROGELS TO DIFFERENTIATE ADIPOSE-DERIVED STEM CELLS TOWARDS NUCLEUS PULPOSUS CELLS

[Sanya Siddiqui \(McGill University\)](#)
THE DEVELOPMENT OF AN IN VITRO CO-CULTURE DEVICE FOR BACTERIAL INFECTION STUDIES

[Fei Xu \(McMaster University\)](#)
SINGLE-STEP LOADING OF CELLS INTO NANOFIBROUS HYDROGEL SCAFFOLDS VIA REACTIVE ELECTROSPINNING

[Fatemeh Zehtabi \(École de technologie supérieure\)](#)
INJECTABLE CHITOSAN HYDROGELS AS EMBOLIZING AND DOXYCYCLINE DELIVERY SYSTEM FOR THE TREATMENT OF ABDOMINAL AORTIC ANEURYSM

Finally, we are also happy to announce a recipient of an International Travel Award to encourage attendance of members from other societies of the IUS-BSE to CBS 2017:

[Liangpeng Ge \(Chongqing Academy of Animal Sciences, China\)](#)
PREPARATION OF A SMALL INTESTINAL SUBMUCOSA MODIFIED POLYPROPYLENE HYBRID MESH VIA A MUSSEL-INSPIRED POLYDOPAMINE COATING FOR PELVIC RECONSTRUCTION

Update from the Student Chapters

Alberta Student Chapter

During the 2016-17 academic year, the Alberta Student Chapter continued hosting its series of biomaterials-related seminars. The first talk (September 2016), presented by Dr. Shell Ip from Precision NanoSystems Inc. (Vancouver, BC), was about the rapidly emerging field of nanomedicine. In our second seminar (November 2016), Prof. Lingyun Chen (University of Alberta) talked about the use of biomaterials in nutraceutical delivery; this talk was followed by an informal coffee session to discuss about careers in academia. Our biggest event was the second version of BioMat Connect (March 2017), an academic/industrial mixer that exposed the UofA community to non-academic career options in biotech-related fields and offered a networking platform by bringing academia and companies together. 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. Other activities that helped promote CBS were the UofA Clubs Fair (September 2016) and a samosa sale to raise funds for our student group (February 2017). To find out more about our group and events, please visit <https://abbimat.ca/>.



Kingston Student Chapter

We have proudly started a CBS student chapter in Kingston (ON) in January 2017, with the exciting idea to bring new and additional values to the Canadian Biomaterial Society. In February, we organized an inaugural event, invited Dr. Brian Amsden and Dr. Lindsay Fitzpatrick and celebrated the foundation of the CBS-KSC with a social at the Grad Club at Queen's University. In March and April, the CBS-KSC hosted Dr. Laura Wells and Dr. Tim Bryant (see picture), both new members of the Canadian Biomaterial Society. CBS-KSC and the Chemical Engineering Graduate

Student Association joined together to organize a meet and greet with Dr. Ankur Singh from Cornell University. This March, we started a Science Club on the topic of Frontiers in Biomaterials and Tissue Engineering that will be presented through a poster during the CBS meeting at Winnipeg. The science club is a small group of undergraduate and graduate students, and postdocs, from different departments attending sessions on a regular basis to critically evaluate a scientific topic and discuss potential solutions. This is a great opportunity for students to improve their knowledge and transferable skills. We are currently organizing a seminar and a symposium that will be held in May and we have many exciting events and seminars planned for the summer.

Please visit our website at:

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

and our Facebook page at:

www.facebook.com/biomaterialskingston



Montreal Student Chapter

Since the beginning of the year, the Montreal student chapter was able to collect 3,400\$ (including 700\$ from CBS funds) in funding for our large conference event at the CRCHUM. We had twelve speakers from academia and industry that gave presentations on drug delivery, tissue engineering, polymers, and device approval. Among the approximately 140 people that were present, we also had 12 posters, with prizes for the best among them. Our participants included delegations from Québec and Ottawa. Hopefully the webinar style

videos we produced will help bring more traffic and membership to the biomaterials site. Although it was a lot of work to gather the funds, we all had a great time, and I would like to thank the CBS for the generous funding and continuing support. We are considering making it into a yearly event with CBS's help.

Please visit our website at:

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



Ottawa Student Chapter

The CBS Ottawa Student Chapter (CBS-OSC) held a seminar on Biomaterials in Heart Regeneration at the University of Ottawa Heart Institute on February 17th, 2017, as initially planned. We invited Dr. Tofy Mussivand to talk about the development of artificial heart by his team, from the prospective of both research and commercialization. We also successfully held a Roundtable Discussion event on April 12th, 2017. We invited four professors from Kingston and Ottawa (Dr. Brian Amsden (Queen's University), and Drs. Xudong Cao, Isabelle Catelas, and Delphine Gourdon (University of Ottawa)). The speakers presented an informative and intriguing discussion on different topics, such as their career path, their opinions about issues in the development and the application of biomaterials in regenerative medicine as well as biomaterials in the field of industry. This roundtable discussion was very well received by the many students who attended the event and who raised many interesting questions. The CBS Ottawa Student Chapter is current working with the CBS Kingston Student Chapter on a joint one-day event that will be held in Kingston this May.

Please visit our website at:

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



Quebec City Student Chapter

Since the beginning of 2017, the CBS Quebec City Student Chapter (CBS-QCSC) has organized no less than 6 conferences held by international speakers such as Prof. Jesse Greener (Université Laval), Prof. Frédéric Chaubet (Université Paris 13), and Prof. Ke Yang (Institute of Metal Research/ Chinese Academy of Sciences). In January, we inaugurated a new traditional event with the first edition of "A New Year for Biomaterials: Wine and cheese + poster presentations" that was very successful in gathering most of the biomaterials scientists from Quebec City. In the coming months, more conferences are to be held, along with a one-day statistic workshop to satisfy student needs (June 2017) and the 2nd edition of the CBS-QCSC Biomaterials Symposium (October 2017). Stay tuned for more news on the upcoming events! Please visit our website at:

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



CBS Visiting Scholar Award

Last reminder! Deadline: April 28, 2017!

The Canadian Biomaterials Society is pleased to announce the 2017 competition for the CBS Visiting Scholar Award, which gives the most promising young scientists the opportunity to visit another university / lab with common research interests and stimulate their interest to pursue their career in the field of biomaterials. The award also intends to foster collaborations as well as exchange of technologies and ideas between Canadian universities in the field of Biomaterials.

Who is Eligible for the Award?

The award is opened to Ph.D. students in their 2nd year and above *and post-doctoral fellows (PDF)* (new for 2017), working in the field of Biomaterials. The student/PDF must fulfill the two conditions given below to be considered for an award:

- Have been a member of the Canadian Biomaterials Society for at least 1 year at the time of application for the award. The supervising professors in the student/PDF home and hosting institutions should also be current members of the Canadian Biomaterials Society.
- Have attended at least one annual meeting of the Canadian Biomaterials Society (which would include a World Biomaterials Congress) prior to the application for the award.

Value of the Award

This award has a value of a maximum of \$3,000, to cover travel and housing expenses for a visit of up to 2 weeks.

Application Procedure

- The candidate should submit:
 - a current CV including the list of publications;
 - a short summary describing the proposed research activities during his/her visit in the hosting institution (maximum 2 pages);
 - a maximum one page budget summarizing the expected expenses.
- The supervising professors (both in the student home and hosting institutions) should submit a maximum 1 page support letter confirming their interest in the collaborative research activity.
- Applications are due **on April 28, 2017**, with a maximum of one award to be distributed and announced at the CBS Annual Meeting in

Winnipeg. Send applications electronically to the CBS Secretary, Lindsay Fitzpatrick (lindsay.fitzpatrick@queensu.ca).

Information can be found on our website at: <http://www.biomaterials.ca/#!/awards/cbs-visiting-scholar>

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Please contact willerth@uvic.ca if you want to contribute to our next CBS Newsletter.



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