



**Canadian Biomaterials Society**  
**Soci t  Canadienne des Biomat riaux**

**Quarterly Newsletter**

**Spring 2016**



**Letter from the President: Lauren Flynn**

Dear Colleagues,

It's hard to believe that spring is already here and the [10<sup>th</sup> World Biomaterials Congress](#) in Montreal from May 17 – 22, 2016 is just around the corner! It's an incredibly exciting time for the CBS, as we look forward to welcoming the world and showcasing the strength, diversity, and spirit of the Canadian biomaterials research community. I'm very pleased to report that we currently have **495 active members** registered in our Society, ensuring that we will have a strong and active presence at the WBC 2016. It's truly an honour to represent such a large and dynamic group of researchers from across our country. A sincere *welcome* to new members joining us for this special opportunity to host what will be the largest gathering of biomaterials researchers to date. Likewise, a sincere *thank you* to all of our members who have been playing important roles to ensure this meeting will be a great success. I hope that the WBC 2016 will be a catalyst for ongoing engagement and many exciting new collaborations, to further bolster our community and ensure that Canada remains an international leader in biomaterials research.

The CBS Board of Directors has been working hard over the past year to support our community and recognize outstanding achievements and contributions of our CBS members through multiple awards opportunities. Further, as highlighted in this newsletter, our investment in the 5 local Chapters is clearly helping to promote biomaterials research awareness, engage new members, and encourage interdisciplinary knowledge exchange and industrial interactions. I commend the Boards of all of the Chapters for their initiative and enthusiasm!

I wish everyone a good start to the spring, and I look forward to seeing you in Montreal!

Sincerely,  
Lauren

**CBS Service Award**

The CBS Board of Directors is very pleased to announce that Dr. Paul Santerre is the 2016 recipient of the [CBS Service Award](#). Paul has been a highly active member of the CBS for many years, and is always an engaged participant in the CBS Annual Meetings. He has been a strong advocate for the Canadian biomaterials research community and has served as both a CBS Board Member and the President. As the President and Co-Chair of the

Organizing Committee, Paul is playing a major role in organizing the WBC 2016 in Montreal, which will help to showcase Canadian biomaterials research to the world. He was also the lead organizer for two previous CBS meetings in Toronto, as well as being involved in the organization of the WBC 1996 in Toronto. As an elected Fellow of Biomaterials Science and Engineering, Paul is actively engaged as a Canadian representative in the international community. Further, he has been an outstanding mentor to a large number of trainees, and is highly supportive of young researchers. In addition to his academic roles, Paul has been contributing to the advancement of commercialization of biomedical technologies in Canada through his involvement with his spin-off company [Interface Biologics](#). His success in this area helps to promote awareness and foster an environment within the Canadian community that is more supportive of IP development and commercialization activities. *Congratulations Paul!*



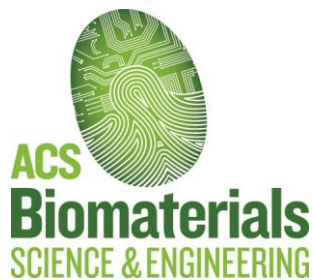
**CBS Events at the WBC 2016**

The **CBS Annual General Meeting** will be held at the WBC 2016 on **Thursday May 19, 2016 from 12:00 – 1:45 PM** in Congress Room 524. We hope that all new and returning members (both junior and senior!) will join us for this important meeting, where we will discuss a number of key topics including our budget, the upcoming 33<sup>rd</sup> CBS Annual Meeting in Winnipeg in May 2017, local chapter updates, and board member elections. A detailed agenda will be circulated in advance. Lunch will be available in the foyer of the room – please mark your calendars and plan to arrive promptly at noon. We look forward to seeing you there!

A special **CBS Symposium** at the WBC 2016 will be held on **Friday May 20, 2016 from 4:30 – 5:30 PM** in Congress Room 520ABDE. This Symposium will showcase the significant contributions of our CBS

Award Winners. More specifically, CBS Lifetime Achievement Award Winner Dr. John Brash will present his work on “*Protein interactions at the biomaterial-tissue interface, the inescapable reality: understanding, preventing, controlling*”. In addition, CBS Early Career Investigator Award Winner Dr. Todd Hoare will share his research on “*Engineering Degradable Smart Hydrogel Biomaterials on Multiple Length Scales*”. Don't miss this special opportunity to recognize outstanding Canadian researchers on an international stage!

The CBS Board of Directors is very pleased to announce that two new awards sponsored by ACS Biomaterials Science & Engineering will be granted to two CBS graduate student members based on their abstracts selected for oral presentations at the WBC 2016. The abstract review process is underway and the winners will be announced at the CBS Symposium! Thank you to the Journal for their generous support, as well as to Associate Editor Dr. Milica Radisic for helping to facilitate this special opportunity recognizing the outstanding research of our junior members.



## WBC 2016 – News from the Student Activity Committee (SAC)

**Dear CBS trainees!** As you may know, the SAC is planning great events for students and post-docs during the WBC 2016, including the treasure hunt on May 17<sup>th</sup>, big party on May 21<sup>st</sup>, local events at Montreal Universities on May 18 and 19<sup>th</sup>, and networking activities on May 22<sup>nd</sup>. Representatives from the SAC will also welcome international attendees at the Montreal airport.

Moreover, there will be a joint SAC-CBS Booth in the Congress Exhibition Hall during the WBC to promote the Society. **Help is welcome from CBS student and PDF members from all across Canada.** This is an excellent opportunity to highlight the strength of our research community, attract new members, and interact with researchers from around the world. If you are able to volunteer a few hours during the meeting to assist with the CBS booth, please complete the form at <https://goo.gl/6szVoX>

If you know Montreal, you can also register to help with other SAC activities, such as the airport welcome (May 16<sup>th</sup> - 17<sup>th</sup>) or treasure hunt (May 17<sup>th</sup> evening). If you are interested or have any questions, please contact the Montreal CBS Chapter at [biomaterials.mtl@gmail.com](mailto:biomaterials.mtl@gmail.com). Otherwise, don't forget to register for the SAC activities. See you in Montreal very soon!

**To the Senior Members of the CBS,** The SAC committee requests your support in participating as academic advisors at a career networking event that will be held at the WBC 2016 on Sunday May 22<sup>nd</sup>. This event will involve round table discussions (2 rounds: 12:00-1:00 & 1:00-2:00 PM) where trainees will have the opportunity to ask career-related questions and discuss research with academic and industrial advisors in an informal setting. Approximately 800 students and PDFs have registered to participate, so your help is needed to facilitate this special mentoring opportunity for the next generation of biomaterials researchers! If you are interested, please contact Dr. Nathalie Faucheux at [Nathalie.Faucheux@USherbrooke.ca](mailto:Nathalie.Faucheux@USherbrooke.ca).

## CBS Travel Awards to WBC 2016

The CBS Board of Directors is very pleased to recognize the following graduate students and post-doctoral fellows in our membership who were awarded CBS Travel Awards based on their top-scoring abstracts submitted to the WBC 2016. From more than 300 eligible Canadian abstracts, 30 awards were granted, valued at a total of \$18,500, to help support registration and travel costs to present at the Congress. *Congratulations to our award winners!*

### Graduate Travel Award Winners:

Ahmed Al Subaie, McGill  
*Injectable Bone Regeneration Biomaterial with Analgesic Properties*

James Baylis, UBC  
*Self-propelling particles that stop hemorrhage by transporting therapeutics through flowing blood*

Antony Bertrand-Grenier, CRCHUM  
*Endoleak and thrombus characterization with dynamic elastography after endoleak embolization following aneurysm endovascular repair*

Mathieu Bouchard, Laval  
*Synthesis of radioactive gold nanoparticles for brachytherapy treatments using plasma electrochemistry*

Scott Campbell, McMaster  
*External control over drug release using microgel- and SPION-laden nanocomposite hydrogels*

Yasaman Delaviz, U of T  
*Synthesis and biodegradation of di-vinyl monomers containing different antimicrobial agents for use in dental adhesive systems*

Helen Dorrington, McMaster  
*“Mix-and-match” design of injectable poly(oligoethylene glycol methacrylate) hydrogels using different thermoresponsive precursors*

Lucie Giraud, University of Montreal  
*Interaction between single strands of siRNA and different chemical groups*

Ophélie Gourgas, McGill

*Characterization of mineral deposits in matrix gla protein-deficient mice, a model of vascular matrix calcification*

Avital Horowitz, McGill

*Quantifying the mechanics of Idiopathic Pulmonary Fibrosis in 3D microculture systems (McGill)*

Manu Thomas Kalathottukaren, UBC

*A Synthetic Heparin Antidote with Negligible Effect on Fibrin(ogen), Clotting and Clot Morphology*

Kyle Koss, Alberta

*MMP-2 induced peptide delivery from self-assembling nanoscaffolds: glial response and PC12 neurogenesis*

Bryan Lee, McMaster

*Modification and evaluation of periodic nanostructures on titanium generated by femtosecond laser for improving osseointegration*

Wontae Lee, McGill

*Distributed hydrogel mechanosensors to measure internal forces in engineered tissues*

Lucie Levesque, Laval

*The effects of frequency on matrix remodeling induced in dynamically strained collagen-based cellularised scaffolds*

Betty (Ying) Li, Western

*Mechanical characterization of electrospun collagen fibers using atomic force microscopy*

Haijiao Liu, U of T

*A microfabricated platform with hydrogel arrays and on-chip strain sensing for mechanical stimulation of 3D cell-seeded hydrogels*

Caroline Loy, Laval

*Cellularised Collagen-based Scaffolds for Engineering The Vascular Wall: a Tri-Culture Study*

Saman Mohammadi, Waterloo

*Ocular Drug Release Models: Comparisons between in vitro Cell, Dynamic Release, and Fixed Volume Models*

John Soleas, U of T

*Geometric manipulation of lung progenitor cells to control cell fate choice*

Warren Viricel, University of Montreal

*Cationic Switchable Lipids : pH-sensitive lipid nanoparticle based on a molecular switch for siRNA delivery*

Claire Yu, Queen's

*Porous decellularized extracellular matrix microcarriers for tissue-specific cell expansion and delivery*

Linyang Yu, U of T

*Affinity-based growth factor delivery system for tissue engineering*

Boyang Zhang, U of T

*AngioChip: a biodegradable scaffold with built-in vasculature for organ-on-a-chip engineering and direct surgical anastomosis*

Huaifa Zhang, McGill

*Oxygen delivery augmented bone formation from transplanted bone marrow*

#### **PDF Travel Award Winners:**

Dr. Vianney Delplace, U of T

*Biodegradable vinyl polymers synthesized by nitroxide-mediated radical ring-opening polymerization, for biomedical applications*

Dr. Saad Khan, OHRI

*Effect of glucose levels on high versus low molecular weight hyaluronan and transfection of bone marrow derived human mesenchymal stromal cells*

Dr. Sébastien Meghezi, Laval

*On the potential of static culture for the reinforcement of collagen-based tissue-engineered vascular substitutes through cell remodeling*

Dr. Ranna Tolouei, Laval

*The use of multiple pseudo-physiological solutions to simulate degradation behavior of pure Fe: towards a standard static immersion test*

Dr. Kai Yu, UBC

*Towards Infection Resistant Surfaces: Polymer Brush Chemistry and Peptide Structure Modulate the Potency of Antimicrobial Peptides*

#### **WBC 2016 Update**



The upcoming [WBC 2016](#) promises to be a very exciting meeting showcasing the most recent advances in the biomaterials field. Over 3600 abstracts were submitted - making it the largest subscribed to Biomaterials and Tissue Engineering event ever held. More than 3000 attendees were pre-registered by the early registration deadline of Jan. 21, 2016, with strong international representation and an even distribution of participants from across the Americas, Asia-Australia, and Europe. The Organizing Committee has secured over 100 exhibitor and sponsor agreements, including both companies with emerging technologies and international industry leaders. There will be 39 New Frontiers Symposia (a number being led by CBS members) highlighting emerging research areas,

along with multiple workshops, clinical sessions, round table discussions and a diverse range of student activities and networking opportunities.

## Student Chapter Updates

### Update from the Alberta Chapter

The Alberta Student Chapter (ASC) created a group web page to include information about our previous and future events ([www.abbiomat.ca](http://www.abbiomat.ca)). On January 21st, 2016, the ASC hosted a Biotech seminar with Dr. Allen Eaves, President of STEMCELL Technologies, who talked about work settings in Biotech companies and guided students about how to build a career in industry. We had great interest on campus, with over 70 attendees (see picture below). This event was possible thanks to our food sale fundraising and our event sponsor Ingenuity Lab. On March 31<sup>st</sup>, we will be hosting our first student-industry mixer in biomaterials research, *Biomat Connect*, at the University of Alberta which will focus on helping students 'bridge the gap' in research from academia to industry, and we will have three local panellists with expertise in this area, as well as a keynote speaker, Prof. Pieter Cullis from UBC. We will also offer networking opportunities for professionals and trainees in biomaterials and health sciences research. This event will increase awareness of and participation in biomaterials, and increase membership and participation in events, and group visibility on the University of Alberta campus. This event will be possible thanks to our sponsors DynaLIFE DX, and the University of Alberta Graduate Student Association.



### Update from the BC Chapter

The [BC Student Chapter](#) of the Canadian Biomaterials Society has gotten off to a great start in 2016! As Vancouver is becoming a hub for biotechnology related start-ups, we recently held our first symposium this past February, focusing on Biomaterials Commercialization. The symposium featured speakers from the student (Jenna Collier, Genentech Intern), academic (Dr. Christian Kastrop, Assistant Professor at UBC and founder of Ptec) and

commercial (Dr. Steve Woodside, STEMCELL Technologies) aspects of industrial research. With generous contributions from both The Canadian Biomaterials Society and STEMCELL Technologies, we were able to host over 70 attendees with representatives from SFU, UVic and UBC. A select group of students were also invited to have breakfast with former CBS member and current Associate Professor at the Harvard Stem Cell Institute, Dr. Jeffrey Karp (see picture below). We are currently in the process of planning our second research day and our annual Summer BBQ!



### Update from the Montreal Chapter

The Montréal Student Chapter recently organized a conference at the École des Technologies Supérieures with invited professors from McGill and Laval Universities to showcase recent research in biomaterials. Also, this event was held to promote CBS involvement in organizing the World Biomaterials Congress and recruit additional student volunteers to act as city guides and assist with activities including the scientific forums, university visits, and student rally.

### Update from the Ottawa Chapter

The CBS Ottawa Student Chapter's 2015-2016 year is looking to show continued improvement in both member involvement and awareness projects. This December we were pleased to have Dr. Sidney Omelon who presented an interesting and thought provoking seminar on not only her research, but also the atypical paths that a researcher can take while being involved as a student, in industry and as a professional academic.

Over the next two months, we will be holding two themed seminar events. The first, to be held at the end of March, will be focused on "Biomaterials and the Heart" where we will have Dr. Michel Labrosse from the University of Ottawa Department of Mechanical Engineering and Dr. Emilio Alarcon from the University of Ottawa Heart Institute. The following seminar series, to be held in April, will be focused on "Tissue Engineering" where we will have Dr. Xudong Cao from the University of Ottawa Department of Mechanical Engineering and Dr. Erik

Suuronen from the University of Ottawa Heart Institute.

Our chapter looks forward to the following months where we will continue to be involved in creating relationships with other student societies, such as the Engineering in Medicine and Biology Society at Carleton University, while spreading awareness of our own society at events such as the IEEE EMBS International Student Conference in late May. We also are looking forward to being actively involved in the World Biomaterials Congress 2016 coming up very soon, where we will have a couple members presenting. We hope to see you all there in May!

### **Update from the Quebec Chapter**

Since the beginning of 2016, the Quebec City Student Chapter organized one conference and one workshop. In January, we welcomed Dr. Robert Guidoin, from the Research Hospital Center of Laval University. He gave an interesting talk focused on recent problems with implanted vascular devices. Later in February, we organized a workshop led by Dr. Jesse Greener from the Chemistry Department at Laval University. The workshop entitled "Image Analysis" was attended by around 50 students and mostly focused on the use of the imaging software ImageJ. Most recently, we are organizing several conferences with invited professors from Vellore Engineering College and from l'Université de Québec à Montréal.

### **Renew your CBS Membership!**

If you haven't already done so, remember to renew your membership for 2016! It's easy to register online at the following link:

<http://www.biomaterials.ca/#!/membership/join>

#### ***CBS Newsletter editorial board***

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Todd Hoare

Please contact [lauren.flynn@uwo.ca](mailto:lauren.flynn@uwo.ca) if you would like to contribute to our next newsletter.



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