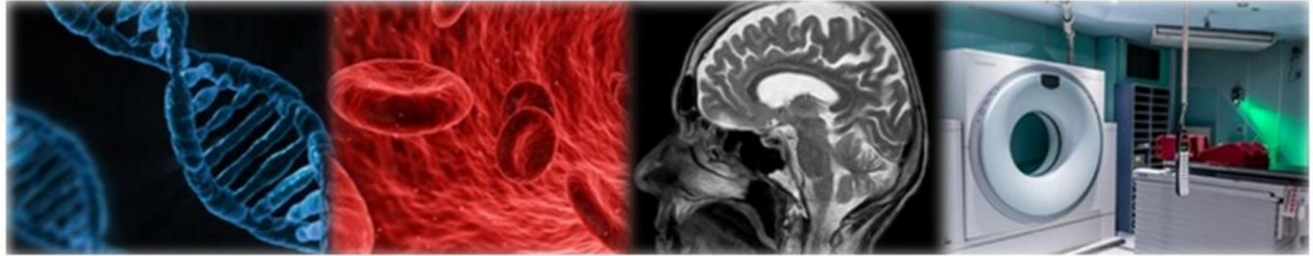


Division of Physics in Medicine and Biology
Canadian Association of Physicists



In this issue of DPMB Newsletter

- + Greetings from the Chair
- + DPMB Executives for 2019-2020
- + Message from the Past Chair
- + Message from the Vice Chair
- + DPMB at the 2019 CAP Congress
 - o Student presentation winners
 - o Photo gallery
- + Future events
- + Acknowledgements

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Greetings from the Chair

Dear members and friends of DPMB,

I hope that you are enjoying the summer. It was great to meet many of the DPMB members at the CAP congress at Simon Fraser University last month. I would like to thank the local organizing committee as well as the CAP and DPMB executive members for putting together a very successful event. DPMB had 10 sessions at the congress, which were very well attended. Next year's congress will take place in Hamilton, ON from June 8th-12th. Stay tuned for more information about planning the DPMB program at the 2020 congress in a future newsletter.

I'd also like to thank everyone who attended the DPMB business meeting at the congress. Some important issues were discussed including: increasing our membership; finding more sponsorship opportunities; and strengthening our partnerships with sister organizations, such as the Biophysical Society of Canada (BSC) and the Canadian Organization of Medical Physicists (COMP). Discussions with BSC were initiated at the congress and I am also happy to report that COMP has reached out to us about finalizing a memorandum of understanding. If you have any thoughts on these topics please send them to me (emily.heath@carleton.ca).

Below you will see the 2019-2020 DPMB executive. Melanie Campbell has agreed to stay on as DPMB treasurer and I'd like to welcome Ozzy Mermut from York University who is the new DPMB Vice Chair. Special thanks go out to our past chair, Francis Lin, for his leadership this past year. One of Francis' initiatives during his tenure as Chair was this newsletter, which is something we intend to keep doing. Francis also continues to maintain the DPMB website. Finally, Luc Beaulieu, our Past Chair, is leaving the DPMB executive but will still stay involved with CAP as a member of the CAP-NSERC liaison committee.

Emily Heath, DPMB Chair

DPMB Executives, 2019-2020



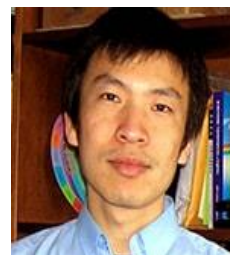
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Past Chair
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Message from the Past Chair

The DPMB program in the 2019 CAP Congress at Simon Fraser University brought together researchers, students, friends and partners in our community for a number of exciting scientific sessions as well as social event.

In the morning of the first congress day (June 3), Dr. Na Ji from UC Berkeley delivered an excellent plenary talk on the topic of high spatiotemporal resolution brain imaging research, which was well attended and received. Following the successful DPMB 101 session in the 2018 CAP Congress, which provided introductory talks to promote concepts used in biophysics and medical physics, we again organized a "Physics in Medicine and Biology 101" session in the 2019 CAP congress. This session was the first DPMB technical session on June 3 after Dr. Ji's plenary talk. This year, the 101 session welcomed Dr. Ian V. Ross (Nikon Instruments Inc.), who introduced various applications of modern optical microscopy in Biology, and Dr. Cornelia Hoehr (TRIUMF), who introduced cyclotrons for medicine. Joint with DAMOPC, we organized a thematic session on "Emerging investigators in bioimaging and medical applications of optics" in the afternoon of June 3. The three invited speakers were Dr. Ali Hatef (Nipissing University), Dr. Ozzy Mermut (York University) and Dr. Michèle Desjardins (Université Laval).

Another event to highlight was the very first joint session by DPMB, DCMMP and the Biophysical Society of Canada. This year's topic is on Membrane Biophysics, which included a number of invited talks and contributed talks in two 90min sessions on June 6. In addition, we organized three thematic sessions in medical physics on June 4 and 5, a Topics in Medical Physics and Biophysics session on June 4, and a session on Molecular Motors on June 5, which together included another seven invited speakers. In total, the DPMB program in this year's CAP Congress included 18 invited speakers and received more than 40 abstract submissions. In addition to our division business meeting on June 3, some of us also enjoyed a DPMB mixer event (i.e. DPMB Get-Together) at the Study Public House during the congress, in which we got to learn more about each other's work, chat about the history of the division, share experience of the congress, and touch base on future visions for the division.

As usual, DPMB organized student competitions for both oral and poster presentations. We were so impressed by the high quality of these student presentations and are proud of their achievements. We congratulate the recipients of the DPMB oral and poster presentation awards, the CAP final oral and poster presentation competition awards, and also the poster awards sponsored by the Biophysical Society of Canada.

We want to sincerely thank all the speakers and presenters in the DPMB related sessions, and other colleagues, friends and sponsors (Nikon for the Plenary Speaker session; Micromachines for the DPMB student prizes) for their support of the DPMB program in the 2019 CAP Congress! Special thanks to Nancy Forde, Zoya Leonenko and Maikel Rheinstadter for organizing sessions, the support from DAMOPC, DCMMP and the Biophysical Society of Canada for jointly

organizing sessions and Biophysical Society of Canada sponsored membrane biophysics poster awards! Appreciations also go to Stefan Wallin for helping with judging the DPMB student competitions, the CAP staff members, and the SFU local organizing team and students helping during the meeting! In the coming year, we very much look forward to continuing the various DPMB activities and strengthening collaborations with other divisions, relevant societies and partners, and to developing possible new initiatives.

More details of the DPMB program in the 2019 CAP Congress can be found in the later sections of this newsletter and the DPMB division website: <http://dpmb.physics.umanitoba.ca/cap%202019.html>

In closing, I would like to express our high appreciation to Luc Beaulieu for his excellent contribution and leadership to DPMB over the past three years. Luc has now completed his term in the executive team and we hope he will continue helping develop the division activities. As I move to Past Chair, the leading role of the DPMB executive team will be handed to Emily Heath (Carleton University) over the next year and Melanie Campbell (University of Waterloo) has accepted to stay with us as the treasurer. We warmly welcome Ozzy Mermut from York University as the new Vice Chair of the division.

Francis Lin, DPMB Past Chair

Message from the Vice Chair

It is with great pleasure I join the DPMB Executive leadership at a unique time when interdisciplinary research in the principles and methods of physics to understand and modify the nature of biological systems is surging. I look forward to working with my Executive member colleagues on expanding DPMB contributions in CAP and more generally abroad with our scholarly activities and advancing our field with meaningful impact.

Ozzy Mermut, DPMB Vice Chair

DPMB Student Presentation Winners at the 2019 CAP Congress

DPMB Division Student Oral Presentation Winners

1st Place: Alaa Al-Shaer, Simon Fraser University

Title: Atomic force microscopy reveals how structural variations impact the flexibility of collagen

2nd Place: Kyle Bromma, University of Victoria

Title: Optimization of nanoparticle transport using monolayer and multilayer cell models

CAP Overall Student Oral Presentation Winners

3rd Place: Alaa Al-Shaer, Simon Fraser University

Title: Atomic force microscopy reveals how structural variations impact the flexibility of collagen

DPMB Division Student Poster Presentation Winner

1st Place: Jeremy Marvin, University of Windsor

Title: Concentration of cells and elimination of extraneous background signals in laser-induced breakdown spectroscopy to identify, differentiate and detect bacteria

CAP Overall Student Poster Presentation Winners

3rd Place: Jeremy Marvin, University of Windsor

Title: Concentration of cells and elimination of extraneous background signals in laser-induced breakdown spectroscopy to identify, differentiate and detect bacteria

Congratulations to our student winners!

DPMB at the 2019 CAP Congress - Photo Gallery

Monday June 3rd:



DPMB sponsored plenary talk by Na Ji (UC Berkeley) 'Imaging the brain at high spatiotemporal resolution'



Physics in Medicine and Biology 101: Cornelia Hoehr (TRIUMF) 'Cyclotrons for Medicine' .



Physics in Medicine and Biology 101: Ian Ross (Nikon) 'Applications of Modern Optical Microscopy in Biology'

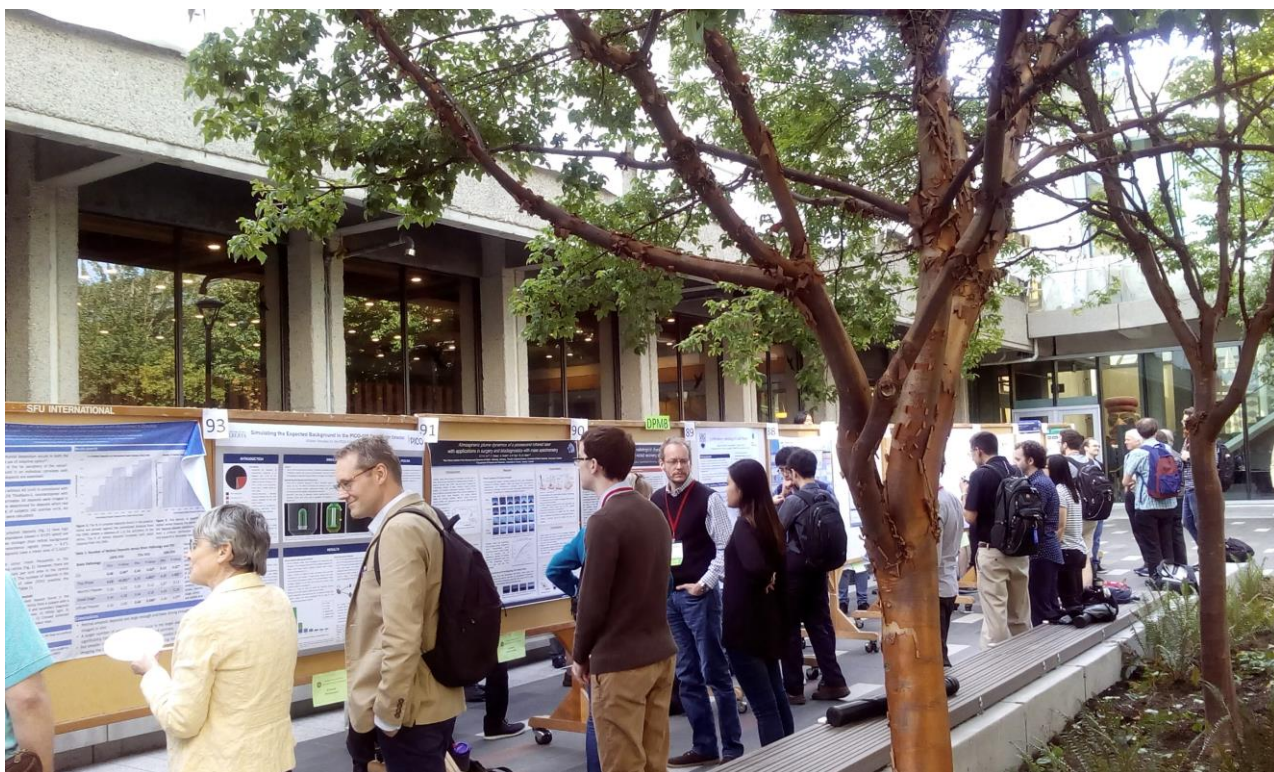
Tuesday June 4th



Topics in Medical Physics and Biophysics: William Whelan (Univ. PEI) 'Monitoring and optimizing beer flavour and quality using Rama spectroscopy'

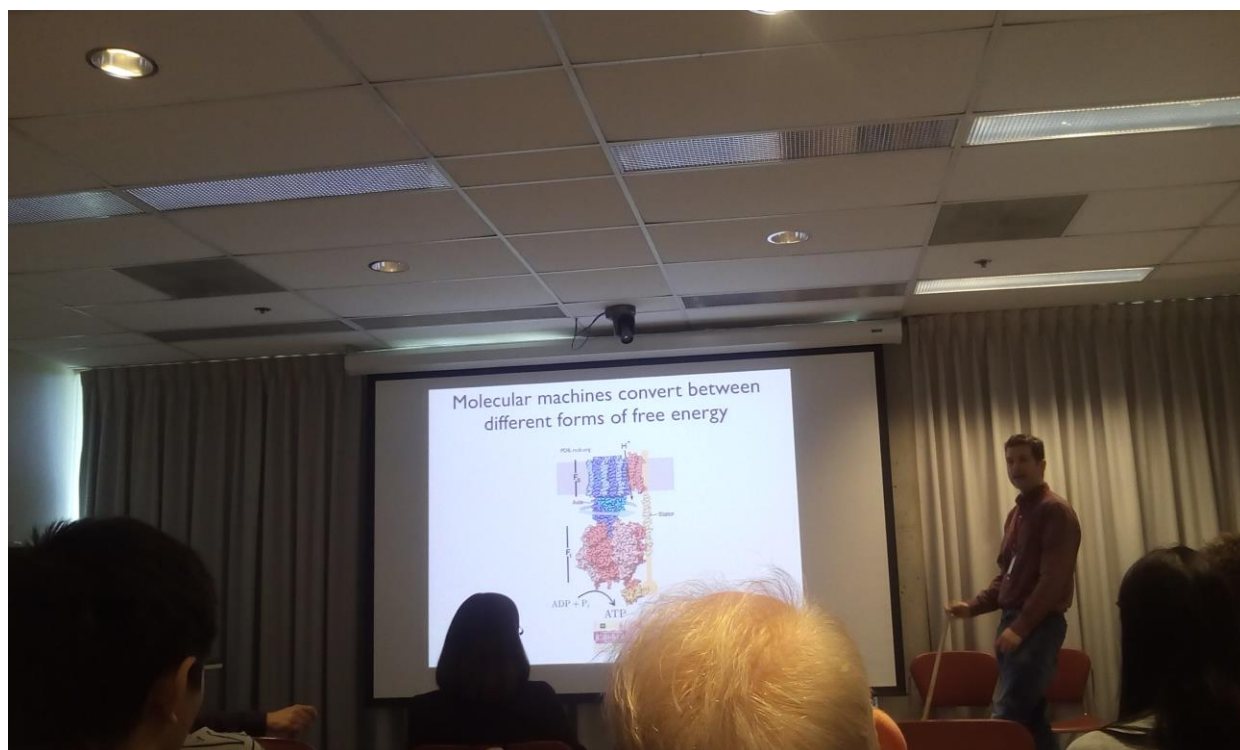


DPMB get-together at the Study campus pub



Student poster session

Wednesday June 5th



Molecular Motors: David Sivak (Simon Fraser University) 'Reducing dissipation in far-from-equilibrium biomolecular processes'



CAP Medalists Awards dinner: Bela Joos receives the CAP-COMP Peter Kirby medal

Thursday June 6th



Membrane Biophysics joint session (DPMB/DCMMP/BSC)



DPMB oral and poster student competition winners

Future events

- ✦ [Annual COMP scientific meeting](#) (Kelowna, September 24-27, 2019)
- ✦ [2020 Biophysical Society Meeting in San Diego](#) (February 15-19, 2020)
- ✦ [2020 APS March Meeting in Denver](#) (March 2-6, 2020)
- ✦ [2020 Biophysical Society of Canada Annual Meeting in Halifax, NS](#) (May 19-22, 2020)
- ✦ [2020 CAP Congress at McMaster University](#) (June 8-12, 2020)

Acknowledgements



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