

# PHYSIOLOGY CANADA

The Newsletter of the...

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CANADIAN PHYSIOLOGICAL SOCIETY



SOCIÉTÉ CANADIENNE de PHYSIOLOGIE

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## Message from the CPS President

Welcome to the Fall 2015 Physiology Canada Newsletter. A major event in which we participated this year was a highly successful satellite meeting, which was co-sponsored with the Canadian Action and Perception Network (CAPNet). I attended this great satellite meeting, which was part of the Canadian Association of Neuroscience Meeting held in Vancouver. The satellite was very well-attended and engaging, and offered the opportunity for a number of trainees to present their work. Miriam Spering, a new councillor for CPS, was the major force behind event organization and its success. At this satellite, the Sarrazin Lecture was given by Dr. Kathleen Cullen of McGill University, a highly accomplished scientist, who gave a wonderful presentation on her insightful work in perception and balance.

A meeting of relevance to CPS, called Incretin 2015, was also held in Vancouver and celebrated the history of the discovery of incretins, including GIP, which was discovered by John Brown at UBC. A number of CPS members attended, including Cathy Chan (CPS Treasurer and Acting Secretary) and me. We have also had councillors finish their terms this year. I would like to thank Gerald Zamponi, for his contribution and hope to see him continue his relationship with CPS. Lily Wu has agreed to continue for a second term.

The current executive and councillors are:

President, Eric Accili, (*Department of Cellular and Physiological Sciences, UBC*)

Past President, Stephen Sims (*Department of Physiology and Pharmacology, Western University*)

Vice President and Acting Secretary, Catherine Chan (*Department of Physiology and Dept. of Agricultural, Food & Nutritional Sciences, University of Alberta*)

Treasurer, Zhong-Ping Feng (*Department of Physiology, University of Toronto*)

Miriam Spering (*Department of Ophthalmology, University of British Columbia*)

Robert Rose (*Department of Physiology and Biophysics, Dalhousie University*)

Andrea Green (*Department of Physiology, University of Montreal*)

Thomas Claydon (*Department of Biomedical Physiology and Kinesiology, Simon Fraser University*)

Marco Prado (*Department of Physiology and Pharmacology, Western University*)

Lingyun (Lily) Wu (*Department of Health Sciences, Lakehead University*)

Our councillors met on three occasions this year to discuss and carry out a number of business-related matters. A major issue we discussed was meeting of the council next year in Toronto, on the occasion of the CAPNet/CPS Satellite Symposium at the Canadian Association of Neuroscience Meeting, to re-visit the vision and mission of CPS. As many of you know, CPS has undergone changes over the past several years, while the research climate and Universities in Canada are also making changes in ways that will strongly impact physiologists in Canada. It was felt that having a fresh look at the vision and mission will help to focus our group and establish an achievable set of objectives for the next five years to support our members. I would encourage members to contact me or one of the other councillors to get more information about our upcoming session in Toronto.

Finally, I would like to again thank all of the members for their continued support of CPS.

Warmly,

**Eric Accili**

President

# CAPnet/CPS Satellite Symposium

CAPnet/CPS Satellite Symposium held at the Canadian Neuroscience meeting in Vancouver, May 24, 2015.

This well-attended symposium on perception and action, jointly organized by CAPnet and the Canadian Physiological Society featured the Sarrazin Lecture given by Dr. Kathleen Cullen of McGill University (*More on that below*). CPS was represented on the Organizing Committee by the chair, Miriam Spering, Andrea Green, Eric Accili and Doug Crawford and by session chair Doug Munoz. A major purpose of the Symposium was to allow trainees an opportunity to present their work orally as well as in poster sessions. The CPS provided 4 travel awards of \$800 each to student members of the CPS who were presenting their work.

The papers were:

- Development of a primate model of Alzheimer's Disease: Characterization of behavioural phenotype. Robert G. Wither, Susan E. Boehnke, Ann Lablans, Robert A. Marino, Brian C. Coe Fernanda G. De Felice and Douglas P. Munoz (*Queen's University*).
- Temporal precision in the neural encoding of linear self-motion by otolith afferents. Mohsen Jamali, Jerome Carriot, Maurice Chacron and Kathleen E. Cullen (McGill University).
- Using eye movements to identify early biomarkers of disease progression in Parkinson's patients with and without LRRK2 gene mutations. Julia E. Morris, Donald C. Brien, Brian C. Coe, Naomi Visanji, Taneera Ghate, Anthony E. Lang, Connie Marras and Douglas P. Munoz (*Queen's University*).
- Cortical substrates for allocentric vs. egocentric representation of remembered saccade targets in the human. Ying Chen and J. Douglas Crawford (*York University*).

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## 2015 Sarrazin Lecture



A highlight of the CAPnet / CPS Satellite Symposium was presentation of the Sarrazin Lecture by Dr. Kathleen Cullen. The title of her talk was "Where are We Going? Sensing Self-motion for Perception and Action." Dr. Cullen is a Professor in the Department of Physiology and Director of the Aerospace Medical Research Unit at McGill University. She is also affiliated with the Departments of Biomedical Engineering, Neurology and Neurosurgery, and Otolaryngology, and has been a William Dawson Chair in recognition of her work in Neuroscience since 2002.

Dr. Cullen's research is aimed at understanding how the brain creates neural representations of our motion to ensure the maintenance of balance and posture, as well as accurate perceptual stability during our everyday activities. To do this she studies neuronal population responses at successive stages of vestibular processing (i.e., afferents, brainstem, cerebellum, thalamus, cortex) to determine how vestibular information is combined with proprioceptive, visual, and motor signals. She also studies neural ensemble activity and behavior before and after vestibular loss, and the evaluation and enhancement of treatments (e.g., neuroprosthetic devices) with the goal of improving / restoring vestibular function and motor performance in patients.

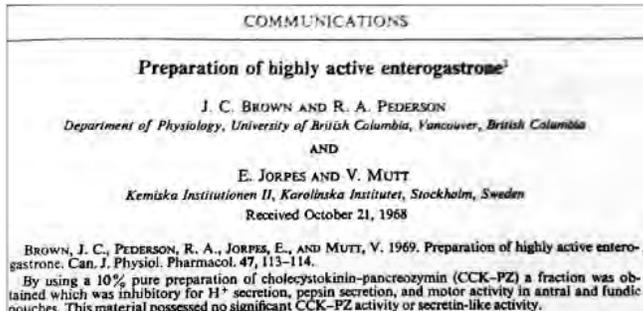
In addition to her research activities, Dr. Cullen has served on numerous Editorial Boards (*i.e., Journal of Neuroscience, Journal of Neurophysiology, and Journal of Research in Otolaryngology*) as well as on the Scientific Advisory Board of the National Space Biomedical Research Institute, which works with NASA to identify health risks in extended space flight. Among recent honours, she was the recipient of the Halpike-Nylen medal of the Barany Society for "outstanding contributions to basic vestibular science" and was elected Chair of the Gordon Research Conference on Eye Movements. She is also Communications Lead for the Brain@McGill and vice chair of this year's Canadian Association for Neuroscience meeting.

Visit her website for more information about her current research interests, team, and recent publications:

<https://www.mcgill.ca/vestibular-gazecontrol-lab/home-page>

# Canadian Physiology History at Incretin 2015

Another conference of interest to CPS members was the Incretin 2015 meeting, also held in Vancouver (July 29-31). A special tribute to the Canadian discoverers of the incretin hormone Gastric Inhibitory Polypeptide (GIP) was held to celebrate the 45 year anniversary of its isolation and characterization. GIP was discovered in the Department of Physiology at the University of British Columbia by Drs. John C. Brown (CPS Sarrazin Lecturer, 1989) and Raymond Pederson, now CPS Emeritus members. Later, they were joined by Dr. Chris McIntosh and together they performed much of the early biochemical and physiological characterization of GIP. Together, Ray Pederson and Chris McIntosh realized that GIP was inactivated by a serum enzyme called DPP-IV (which also inactivates a sister incretin, Glucagon-like Peptide-1). This led to the development of DPP-IV inhibitors, which are now approved for treatment of diabetes. These drugs increase circulating GIP and GLP-1, which stimulate endogenous insulin secretion and thereby help to control blood glucose in type 2 diabetes.



Key publications:

Pederson RA and Brown JC.

The insulinotropic action of gastric inhibitory polypeptide in the perfused isolated rat pancreas.

*Endocrinology* 1976; 99:780-785.

Kieffer TJ, McIntosh CH and Pederson RA.

Degradation of glucose-dependent insulinotropic polypeptide and truncated glucagon-like peptide 1 in vitro and in vivo by dipeptidyl peptidase IV.

*Endocrinology* 1995; 136:3585-3596.

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## Call for Nominations

### CPS Council Positions

Vice President, 2-year term 2016 and 2017, becoming President in 2018.

Secretary, 3-year term 2016-18

Councillor (2 positions), 3-year terms 2016-18

Please contact Nominating Committee Chair Stephen Sims ([Stephen.sims@schulich.uwo.ca](mailto:Stephen.sims@schulich.uwo.ca)) or Secretary Cathy Chan ([cbchan@ualberta.ca](mailto:cbchan@ualberta.ca)) if interested.

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### Stevenson Award

Departmental Chairs and Research Directors are encouraged to nominate suitable applicants from other Universities and to facilitate the nomination of their young faculty by Chairs/Directors from other Universities. Each year the Canadian Physiological Society offers a Visiting Professorship to an outstanding young Canadian Physiologist. The purpose of the Visiting Professorship is to promote collaboration and exchange of information among investigators at Canadian Universities and to strengthen graduate training programs in physiological research. The Society will provide travel expenses for the visiting professor; living expenses will be the responsibility of the host University. The award enables a distinguished young investigator from another Canadian Institution to visit the host university and to give a lecture and/or graduate seminars.

The selection of the Visiting Professor will be the responsibility of the Council of the Canadian Physiological Society and will be based on the scientific achievements of the candidate. Nominees for this award will be, or is expected to become, a member of the Canadian Physiological Society. The Visiting Professorship will not be awarded to candidates after the tenth year from receiving their first faculty position. In the event that more than one host University has requested the chosen recipient, the University which first placed the request will be given preference.

*Nominations should be sent to the Secretary of the Society at the address given below. Each nomination should include a letter from the sponsor setting out the proposed itinerary and include the curriculum vitae of the candidate.*

**Nominations must be received by the Secretary before October 1.** Electronic versions of letters of nomination and supporting documents should be sent to:

Dr. Cathy Chan

e-mail: [cbchan@ualberta.ca](mailto:cbchan@ualberta.ca)

## Call for Nominations *Continued...*

### Macintosh Senior Visiting Professorship of the Canadian Physiological Society

Each year the Canadian Physiological Society offers a Senior Visiting Professorship to an outstanding senior Canadian Physiologist. This Senior Visiting Professorship is named in honour of Dr. F.C. (Hank) MacIntosh and is sponsored by the Corporate Patrons of the Canadian Physiological Society. The purpose of the Visiting Professorship is to promote collaboration and exchange between physiology departments and investigators at Canadian Universities.

The visiting professor would be encouraged to visit two or more departments within the same geographical region of the country, so nominations can come from a single department or jointly from two or more. The visiting professor would be expected to spend several days at each institution giving seminars, meeting other investigators and holding sessions with the host department's graduate students.

The selection of the Senior Visiting Professor will be the responsibility of the Council of the Canadian Physiological Society and will be based on the scientific achievements of the candidate. Nominees for this award should be a member of the Canadian Physiological Society and have made a contribution to the Society. Normally, the Visiting Professorship will not be awarded to candidates before the tenth year from receiving their highest degree.

***Nominations should be sent to the Secretary of the Society at the address given below. Each nomination should include a letter from the sponsor/s setting out the proposed itinerary and include the curriculum vitae of the candidate. Individuals who wish to be considered for the F.C. MacIntosh Visiting Professorship are encouraged to approach departments for sponsorship, but they cannot apply directly.***

***Nominations must be received by the Secretary before October 1.*** Electronic versions of letters of nomination and supporting documents should be sent to:

Dr. Cathy Chan

e-mail: [cbchan@ualberta.ca](mailto:cbchan@ualberta.ca)

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## Upcoming Physiology Meetings

### The International Union of Physiological Sciences

A reminder that the 38th Congress of the International Union of Physiological Sciences will be held in Rio de Janeiro, Brazil. Penny-Moody Corbett, Associate Dean Research at Northern Ontario School of Medicine, is on the Organizing Committee for this congress. The congress currently has a call for symposia. Early in 2016, CPS Council will discuss support for Canadian symposium organizers and speakers, so stay tuned. The deadline for symposium proposals is March 14, 2016.

**More information is available here:** [http://iups2017.com/?page\\_id=21](http://iups2017.com/?page_id=21)

### The 2016 CAPnet/CPS Satellite Symposium

The 2016 CAPnet/CPS Satellite Symposium on "Action & Perception: Cognition, Coding and Clinical populations" will be held at the Canadian Neuroscience meeting in Toronto, May 29, 2016.

**More information is available at:** <http://can-acn.org/capnet-cps-satellite-action-perception-cognition-coding-and-clinical-populations>

### Canadian Association of Neuroscience

May 29-June 1, Toronto. **More information at:** <http://can-acn.org/meeting2016>

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## The CPS Promotional Fund

Up to \$2,500.00 will be available twice a year to organizers of CPS events which stimulate physiology research, integration and/or teaching in Canada. For example, the funds can be used as seed money for the holding of a regional meeting, or promotion of the CPS at a national or international conference. There will be two competitions for funds, with application deadlines January 1st and July 1st. Multiple awards may be allocated at any competition. Any funds available from the January competition will be carried forward to the July 1st competition. Regular CPS members are eligible to apply. Send a 1-2 page proposal to the secretary of the CPS, describing the amount requested, date, location and nature of the planned event. Indicate how the requested funds will support the event and how the event will foster Canadian physiology. Events sponsored by the CPS Networking Fund will display a CPS banner to promote the Society and recognize its financial support.

For detailed information please visit the [CPS website](#).

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