

## **2017 Annual Business Meeting / Réunion générale annuelle 2017**

### **Academy of Science / Académie des sciences**

Saturday, November 25, 2017 at 12:00 pm / Le samedi 25 novembre 2017 à 12:00

East/Midway Ballroom / Salle East/Midway

Fairmont, Winnipeg, MN

### **Minute / Procès-verbal**

**ATTENDANCE:** See the separate attendance sheets (Gary Slater / Marie-Lyne Renaud)

#### **1. Introduction**

Academy President Jamal Deen welcomed everyone, with special words of welcome to the New Fellows. He introduced the other Fellows at the head table: Keith Hipel, Past President; Vijaya Raghavan, Present-Elect, and Gary Slater, Secretary.

#### **2. Approval of the Agenda / Acceptation de l'ordre du jour**

Motion to approve the agenda (moved and seconded). Carried.

#### **3. Minutes of the last meeting / Procès-verbal de la dernière reunion**

Motion to approve the minutes (moved and seconded). Carried.

#### **4. Business arising from the minutes / Affaires découlant du procès-verbal**

There was no business arising from the last meeting.

#### **5. Reports of the Academy President and Past-President / Rapports du Président de l'Académie et du Président sortant**

- a) The President's report appears as Appendices 1-5 as attached to the minutes. Jamal Deen reported that the Academy Council had approved the formation of a Past-Presidents' Council. The Council will allow the Academy to benefit from the experience accumulated over the years by the Academy Presidents. It will be advisory in nature, hence will not make decisions that are binding on the Academy. The Council will meet once a year in person and as required by phone. The terms and mandate of the Council will be reviewed after five years to see if improvements can be made. The first meeting followed after the ABM.

Other activities in which the President took part included: the formulation of guidelines for criteria to be used in the selection of Foreign Fellows, working with Division Directs to ensure that all committees are at full complement, interacting

with PAGSE – Partnership Group for Science and Technology. Unfortunately, he was unable to attend the second Bacon and Egghear talks that PAGSE organised on Parliament Hill, but the incoming Academy Secretary Gary Slater will substitute and attend future ones whenever possible.

- b) Past-President Keith Hipel reported that he chaired the Academy of Science Awards Committee and congratulated the winners of the various awards.

**6. Report of the Academy Secretary / Rapport du secrétaire de l'Académie**

The report of the Academy Secretary with respect to his attendance at PAGSE is appended.

**7. Reports of the Division Directors / Rapports des directeurs des divisions**

a) Division ASE

Claudio Canizares, Division Director, thanked his committee members. Over the past year, the Division evaluated 59 nominations for New Fellows, out of which eight were elected. The divisional Committee for the Selection of new Fellows is at full complement for the coming year, with 11 members.

b) Division EOAS

Nat Rutter in the absence of Barbara Sherwood Lollar and Michael Evans chaired the session and reported election of four New Fellows. The divisional committee for the selection of new Fellows is at full complement for the coming year.

c) Division LS

Michel Tremblay, incoming Director of the Division mentioned that the committee evaluated 144 applications, out of which 19 were elected as New Fellows.

d) Division MPS

Bruce Gaulin, Division Director presented that the committee evaluated 69 Canadian nominations and one Foreign nomination, out of which 10 were elected as New Fellows.

e) Others

Academy elected one Foreign Fellow and two specially elected Fellows.

- 8. President-Elect Vijaya Raghavan thanked President Jamal Deen for his excellent leadership and contributions to the Academy.
- 9. The Academy Operations Manual was presented by Vijaya Raghavan for input from the members.
- 10. President Vijaya Raghavan thanked Mme. Marie-Lyne Renaud for her continued support to the Academy.

11. There being no further business, the motion to adjourn (moved and seconded) was passed.

**List of Attachments**

1. Summary of President's Report (President Jamal Deen) (Appendices 1 to 5)
2. PAGSE Annual Report (Secretary Gary Slater)
3. Division Reports
4. Academy Operations Manual (V. Raghavan)
5. Past President's Council

## Summary of President's Report (Details in Appendices 1 - 5) – Dr. M. Jamal Deen

### Appendix 1

- Chair of 4 Committees – Council, Executive Ctee, Program Ctee, New Fellows Selection.
- Member of RSC – Executive, Board of Directors, Committee for the Nomination of Officers.
- PPC - Established Past Presidents' Council (PPC).
- Foreign Fellows - Finalized Academy's guidelines for evaluating Foreign Fellows nominations.
- Member - Board of Directors of the A.G. Huntsman Award for Excellence in the Marine Sciences.
- Invited - Reception at Japanese Canadian Cultural Center to celebrate the Birthday of His Majesty the Emperor of Japan, Friday 24 November 2017.
- Representative of RSC as Academy President - Royal Society of Canada visit to McMaster University "Nomination and Strategic Planning Session" followed by a "Reception for our Fellows and College Members", Tuesday October 3, 2017
- Panelist - International Academicians Forum on "Industry 4.0 and Made in China 2025", Yiwu, Zhejiang Province, China, Tuesday 19 September 2017.
- Co-organizer - International Academicians Forum on "Industry 4.0 and Made in China 2025", Yiwu, Zhejiang Province, China, Tuesday 19 September 2017.
- Press release - FACETS Endorsed as Official Journal of the Royal Society of Canada's Academy of Science. Appointment highlights new innovative partnership between Canada's National Science Academy and Canada's foremost science publisher. 20 June 2017
- Special VIP Guest - 120<sup>th</sup> Anniversary Celebrations of Zhejiang University (ZJU), Hangzhou, China, Sunday 21 May 2017.
- Lunch Meeting - Mr. Koji Omi, Chigusa Higashida, Consul (Economic Affairs), Consul-General of Japan in Toronto. Friday 24 March 2017.
- Distinguished Lectures (DLs) at Conferences, Forums, Workshops – 14 DLs in Brazil, China, Singapore, Thailand, UK.
- Special Lectures (SLs) – 14 SLs various Organizations/Universities in China.

### Appendix 2

- Representation -- PAGSE Meetings in Ottawa; 8 events in past year. Details in Appendix 2.

### Appendix 3

- Committees of Academy III– Listing of various committees in Academy of Science.

### Appendix 4

- Facets – Official Journal of the Royal Society of Canada's Academy of Science,

### Appendix 5

- New Fellows Orientation Manual – Prepared preliminary draft of Orientation manual with Prof. Pekko Sinervo and Prof. Patricia Brubaker, University of Toronto.

Respectfully submitted

M. Jamal Deen PhD DEng-hc Dr-hc Dr-hc Dr-hc  
 FRSC FCAE MEASA FNASI FINAE FIEEE FAPS FECS FAAAS FEIC  
 President - Academy of Science, Royal Society of Canada (2015-17)  
 Distinguished University Professor; Senior Canada Research Chair in Information Technology (11 Nov 2017)

## Appendix 1 - pages 2 to 6

### Report from the President of Academy of Science Secretary (Jamal Deen) - 2016-2017

**As President of the Academy of Science I was actively involved in the following bodies:**

1. Chair, Academy of Science Council
2. Chair. Academy of Science Executive Committee
3. Chair. Academy of Science Program Committee
4. Chair. Academy of Science Committee for the Selection of New Fellows
5. Member, RSC Executive
6. Member, RSC Board of Directors
7. Member, RSC Committee for the Nomination of Officers

**In addition to the usual responsibilities associated with participating in the above committees and Councils, I was actively involved in the following Academy activities**

- “Past Presidents’ Council (PPC)” functioning. First official meeting held at last AGM of RSC. The officers are  
**Chair:** Lawrence A Mysak, [lawrence.mysak@mcgill.ca](mailto:lawrence.mysak@mcgill.ca)  
**Secretary:** Marie D’Iorio, [mdiorio@uottawa.ca](mailto:mdiorio@uottawa.ca)  
**“Visual Archivist”:** Keith Hipel, [kwhipel@uwaterloo.ca](mailto:kwhipel@uwaterloo.ca)  
 Next meeting on Saturday 25 November 2017, 3-5 pm, Cambridge Room, AGM in Winnipeg.
- Finalized guidelines for evaluating Foreign Fellows.
  1. Membership/Fellow status in relevant national academy in home country or country of residence, where bodies similar to RSC exists. Election to Fellow status in international and national professional societies serving discipline, e.g. IEEE, APS, ECS, AIChE, AIMBE, etc., if such society exists. Have received national/international honours, awards and prizes.
  2. Scholarly record and interests should demonstrate contributions/relevance to Canadian science and/or technology and should demonstrate exceptional and continuing achievements in original research.
- Working with Past President and Division Directors to populate all committees.
- Interacting with **Partnership Group for Science and Engineering (PAGSE; [www.pagse.org](http://www.pagse.org))**. Since most meetings are in Ottawa, invited incoming Secretary, Gary Slater of University of Ottawa, to represent our Academy at PAGSE events – he accepted. PAGSE had 7 presentations in 2016-2017 cycle.
- Reported on RSC Council meetings during the year.

## Invitations Received and Commitments as President of the Academy of Science.

As President of the Academy of Science and a Research Scholar, I received many invitations to deliver special lectures at International Conferences, Forums and Universities. In the past year, I accepted to participate in the following activities or requested another Fellow to participate as representative of our Academy.

- **2015-2017:** Serving as Member of the Board of Directors of the **A.G. Huntsman Award for Excellence in the Marine Sciences**. Award associated with the Royal Society of Canada <https://rsc-src.ca/en/fellows/medals-awards/rsc-medals-awards#Huntsman>.  
**Tuesday 28 November 2017:** The 2017 award winner is Prof. Jeffrey Hutchings FRSC, Dalhousie University, with ceremony on 28 November 2017. Requested Prof. John Cullen FRSC, Department of Oceanography, Dalhousie University (Chair of 2015 RSC Annual Symposium “Canadian Marine Biodiversity” in Victoria) to attend the ceremony and present the medal.  
The AGM of the A.G. Huntsman Foundation will also be held on Tuesday 28 November 2017 from 9:30 am. Requested Prof. John Cullen FRSC, Department of Oceanography, Dalhousie University to attend.
- **Friday 24 November 2017:** Invitation to reception at Japanese Canadian Cultural Center to celebrate the Birthday of His Majesty the Emperor of Japan. This conflicts with our AGM in Winnipeg, so requested Fellow in Toronto to represent our Academy.
- **Tuesday 30 October 2017 - Representative of RSC as Academy President - Royal Society of Canada** visit to McMaster University with agenda “Nomination Planning Session”, “Strategic Planning Session” and “Reception for our Fellows and College Members”. Gave speech on behalf of RSC.
- **Tuesday 19 September 2017:** Panelist at **International Academicians Forum** on “Industry 4.0 and Made in China 2025”, Yiwu, Zhejiang Province, China.
- **Tuesday 19 September 2017:** Co-organizer of **International Academicians Forum** on “Industry 4.0 and Made in China 2025”, Yiwu, Zhejiang Province, China. Two academicians from Canada (Cyril Leung FRSC and myself), another from Australia and three Chinese academicians were keynote speakers.
- **Sunday 21 May 2017:** Special VIP Guest, 120<sup>th</sup> Anniversary Celebrations of Zhejiang University (ZJU), Hangzhou, China. Wrote special congratulation letter to President Wu Zhaohui of ZJU on behalf of Academy of Science.
- **Friday 24 March 2017:** Scheduled lunch meeting with Mr. Koji Omi, Chigusa Higashida, Consul (Economic Affairs), Consul-General of Japan in Toronto. Mr. Omi is considered one of the most influential figures in science and technology in Japan and was keenly interested in speaking with me. He served several government posts in Japan's Ministry of International Trade and Industry, as well as prominent positions in the cabinet as Minister of Finance, Minister of Science and Technology, Minister of Economic Planning. In 2004 he founded the Science and Technology in Society (STS) forum that takes place in Kyoto every October and is the current chairman Attendance at STS is only by invitation. STS forum aims to build a global network of scientists, business people, policy makers and

journalists to explore opportunities arising from science and technology to remove barriers and solve problems facing humankind.

- **Sunday 21 May 2017: Special VIP Guest, 120<sup>th</sup> Anniversary Celebrations of Zhejiang University (ZJU), Hangzhou, Chine.** Wrote special congratulation letter to President Wu Zhaohui of ZJU on behalf of Academy of Science.
- **Friday 24 March 2017:** Scheduled lunch meeting with Mr. Koji Omi, Chigusa Higashida, Consul (Economic Affairs), Consul-General of Japan in Toronto. Mr. Omi is considered one of the most influential figures in science and technology in Japan and was keenly interested in speaking with me. He served several government posts in Japan's Ministry of International Trade and Industry, as well as prominent positions in the cabinet as Minister of Finance, Minister of Science and Technology, Minister of Economic Planning. In 2004 he founded the Science and Technology in Society (STS) forum that takes place in Kyoto every October and is the current chairman Attendance at STS is only by invitation. STS forum aims to build a global network of scientists, business people, policy makers and journalists to explore opportunities arising from science and technology to remove barriers and solve problems facing humankind.

### **Invitations as President of Academy of Science: Distinguished & Special Lectures**

- **Thursday 19 October 2017:** RAE Distinguished Visiting Fellowship Award Lecture - *Smart Sensors and IoT - Research, Trends and Opportunities*, Department of Computer Science, College of Engineering, Mathematics and Physical Sciences, University of Exeter, Exeter, UK.
- **Saturday 23 September 2017:** Opening Keynote Speech on "*Smart Sensors and IoT – Research, Trends and Opportunities*" at IEEE 5<sup>th</sup> International Conference on Enterprise Systems (ES2017) – with theme "*Made in China 2025 and Industry 4.0*". Cyril Leung FRSC also gave a keynote presentation on "*Internet of Moving Things as Enabler of Industry 4.0*".
- **Tuesday 19 September 2017:** Panelist at International Academicians Forum on "*Industry 4.0 and Made in China 2025*", Yiwu, Zhejiang Province, China.
- **Tuesday 19 September 2017:** Opening Keynote Speaker, "*Smart Sensors and IoT – Research, Trends and Opportunities.*" Forum attended by >300 industry, government and academic leaders. Also gave TV interview on smart sensors, IoT and Industry 4.0.
- **Tuesday 19 September 2017:** Co-organizer of International Academicians Forum on "*Industry 4.0 and Made in China 2025*", Yiwu, Zhejiang Province, China. Two academicians from Canada (Cyril Leung FRSC and myself), another from Australia and three Chinese academicians were keynote speakers.
- **Wednesday 13 September 2017:** PIFI Distinguished Scientist Award Lecture, "*Smart Sensor Systems for Ubiquitous Healthcare*", Chinese Academy of Sciences – Institute of Microelectronics, Beijing, China.
- **Tuesday 12 September 2017:** PIFI Distinguished Scientist Award Lecture, "*Smart Sensor Systems for Ubiquitous Healthcare*", Chinese Academy of Sciences – Institute of Electronics, Beijing, China.
- **Monday 4 September 2017:** IEEE Electron Device Society Distinguished Lecture, "*Smart Sensors – Research, Trends and Opportunities*", Departamento de Engenharia de Teleinformática, Universidade Federal do Ceará (UFC), Fortaleza, Brazil.

- **Wednesday 16 August 2017:** Keynote Lecture, "Nano-Optoelectronic Systems for Health Applications," NTU-MediaTek IC Design Workshop, Nanyang Technological University, Singapore.
- **Thursday 19 July 2017:** Opening Keynote Speaker, "Unprecedented Vision: From Quantum Dots to Silicon Imagers," Annual Workshop – 111 Project Base of Wide Band-gap Semiconductor and Micro-Nano-Electronics, Xidian University, Xian, China.
- **Tuesday 18 July 2017:** Keynote Lecture, "Smart Sensors for Ubiquitous Healthcare: Trends and State-of-the-Art," International Summer School on Information and Communication Technology (16-25 July 2017), Xidian University, Xian, China.
- **Tuesday 11 – Thursday 13 July 2017:** Five Invited Tutorials, "Cyber-Physical-Social Systems - From Components to Ubiquitous Intelligence," School of Software Technology, Dalian University of Technology, Dalian, China.
- **Thursday 16 March 2017 :** Opening Keynote Speaker, "Nano-Optoelectronic Systems for Health Applications," BIT's 3<sup>rd</sup> Annual World Congress of Smart Materials – 2017, Theme: *Step Towards a Ubiquitous Smart Future*, Bangkok, Thailand.
- **Saturday 18 February 2017:** Opening Keynote Speaker, "Smart Sensors for Health Applications – Research, Trends and Opportunities," **Second Generation of Information Technology, Technology Innovation Shenzhen-Hong Kong Cooperation, Shenzhen-Hong Kong Cooperation High-Level Forum**, Shenzhen Research Institute, Key Laboratory of Shenzhen System Chip Design, Peking University, Shenzhen, China.

### **Special Lectures**

- **Friday 19 May 2017:** Distinguished Lecture, *Engineering and Science – A Personal Journey from South to North*, College of Information Science and Electronic Engineering, Zhejiang University (ZJU), Hangzhou, China. The lecture is part of celebrations of the 120th anniversary of ZJU.
- **Tuesday 16 May 2017:** Distinguished Lecture, *Engineering and Science – A Personal Journey from South to North*, School of Engineering Sciences, Huazhong University of Science and Technology, Wuhan, China.
- **Saturday 15 April 2017:** Distinguished Lecture, *Biosensors - Playing at the Crossroads of Engineering and the Sciences*, Sichuan University, Chengdu, China.
- **Friday 14 April 2017:** UESTC President Distinguished Lecture 2017 *Smart Sensors for the Grand Challenge in Healthcare*, , University of Electronic Science and Technology of China (UESTC), Chengdu, China.
- **Tuesday 11 April 2017:** Distinguished Lecture, *Smart Sensors for the Grand Challenge in Healthcare*, Jiangxi University of Science and Technology, Ganzhou, China.
- **Monday 13 March 2017:** Distinguished Lecture, *Smart Sensor Systems for Ubiquitous Healthcare*, Qixia District Government Talent Service Center, Nanjing, China.
- **Friday 10 March 2017:** Distinguished Lecture, *Smart Sensors for Ubiquitous Healthcare*, Nanjing Medical University, Nanjing, China.
- **Friday 10 March 2017:** Distinguished Lecture, *Smart Sensors for Environmental Applications*, College of Engineering, Nanjing Agricultural University, Nanjing, China.





- **Thursday 9 March 2017: Distinguished Lecture, *Smart Sensors for Ubiquitous Healthcare*, Jiangsu Life Science & Technology Innovation Park, Nanjing, China.**
- **Monday 20 February 2017: Distinguished Lecture, *Smart Sensors – Research, Trends and Opportunities*, Department of Electrical and Electronic Engineering, Southern University of Science and Technology, Shenzhen, China.**
- **Tuesday 11 January 2017: IEEE Electron Device Society Distinguished Lecture, *Smart Sensors for Health Applications*, Departamento de Electrónica y Tecnología de Computadores, Universidad de Granada, Granada, Spain.**
- **Friday 30 December 2016: Invited Lecture, *Smart Sensors and Smart Home: State-of-the-Art and Future Perspectives*, Computer Science Department, University of Science and Technology Beijing (USTB), Beijing, China.**
- **27 December 2016: Invited Lecture, *Smart Sensors, Smart Homes and Smart Cities*, eHualu-BUPT Research and Technology Tuesday Development Institute, Yiwu, China.**
- **Tuesday 27 December 2016: Invited Lecture, *Smart Sensors, Smart Homes and Smart Cities*, School of Computer Science and Engineering, Beihang University, Beijing, China.**

#### **Fellow Selection Committee**

**ASE** – 11 members, 59 files, 8 elected

**EOAS** - 8 members, 29 files, 4 selected

**MPS** – 8 members, 69 files, 10 elected

**LS** – 9 members, 144 files, 19 elected

## Appendix 2 - Partnership Group for Science and Engineering (PAGSE); page 7

“This flagship series brings together Parliamentarians with experts in science and engineering, showcasing outstanding Canadian research accomplishments. Its purpose is to provide unbiased insight into topical scientific issues, within a non-partisan forum. This prestigious forum represents a unique opportunity for scientists to communicate important findings to a distinguished and influential audience.

The series is organized by PAGSE, an umbrella group of 25 + science and engineering organizations operating under the auspices of the Royal Society, and is supported by NSERC.” In 2016-17 PAGSE organized the presentations listed below.

1. 30-year Journey: Winning the battle against Hepatitis C  
Michael Houghton, University of Alberta (Canada Excellence Research Chair)  
Thursday November 23, 2017
2. Uncharted Waters: A scientific glimpse into the future of the Arctic Ocean  
Jay T. Cullen, University of Victoria (Provost’s Engaged Scholar )  
Thursday October 26, 2017
3. Deep Learning and Artificial Intelligence: Is Canada ready for the challenge?  
Yoshua Bengio, Université de Montréal (Member of Royal Society of Canada, CRC )  
Thursday September 28, 2017
4. Next-generation technologies for tomorrow’s crops: Getting to the roots of global food security  
Leon Kochian, University of Saskatchewan (Canada Excellence Research Chair)  
Thursday May 4, 2017
5. Building a climate-smart world: How development research helps the global population adapt to climate change  
Robert Hofstede, International Development Research Centre (Assoc Director of Climate Change)  
Thursday April 6, 2017
6. Can I Help You? The Future of Socially Assistive Robots in Healthcare  
Goldie Nejat, University of Toronto (Canada Research Chair in Robots for Society)  
Thursday March 9, 2017
7. Unnatural tremors: the science of fracking and earthquakes  
Gail Atkinson, Western University (Fellow of Royal Society of Canada)  
Thursday February 9, 2017
8. Canadian nanorobots: an option for fighting cancer?  
Sylvain Martel, Polytechnique Montréal (Canada Research Chair in Medical Nanorobotics )  
Thursday December 1, 2016

**Submission to the House of Commons Standing Committee on Finance**

**Pre-Budget Consultation in Advance of the 2018 Budget**

**August 4 2017**

**Pdf Version available at**

**[http://pagse.org/images/2017-08-04%20Partnership%20Group%20for%20Science%20and%20Engineering\(PAGSE\)%20submission%20to%20HOC%20Finance%20Cttee%202018%20Pre%20Budget%20Consultation.pdf](http://pagse.org/images/2017-08-04%20Partnership%20Group%20for%20Science%20and%20Engineering(PAGSE)%20submission%20to%20HOC%20Finance%20Cttee%202018%20Pre%20Budget%20Consultation.pdf)**



**Appendix 3 - Committees of Academy III; pages 8 to 12**

<b>ACADEMY OF SCIENCE /ACADÉMIE DES SCIENCES</b>	
<b>COUNCIL/ CONSEIL</b>	<b>2017-2018</b>
<b>Academy President /Président de l'académie</b>	Vijaya Raghavan
<b>Academy President Past /Président sortant</b>	Jamal Deen
<b>Academy President Elect /Président sortant</b>	
<b>Chair – Past Presidents’ Council</b>	Lawrence Mysak
<b>Academy Secretary /Secrétaire de l'académie</b>	Gary Slater
<b>Director, ASE Division /Directeur, SAG</b>	Claudio Canizares
<b>Director, EOAS Division / Directeur, STOA</b>	Barbara Sherwood-Lollar
<b>Director, LS Division / Directrice, SV</b>	Michel Tremblay
<b>Director, MPS Division / Directeur, MSP</b>	Bruce Gaulin
<b>Secretary, ASE Division / Secrétaire de la division SAG</b>	Ajay Dalai
<b>Secretary, EOAS Division / Secrétaire de la division STOA</b>	Ted Evans
<b>Secretary, LS Division / Secrétaire de la division SV</b>	Carol Cass
<b>Secretary, MPS Division / Secrétaire de la division MSP</b>	
<b>Member at Large, ASE Divison / Représentant (te) de la division SAG</b>	Flora NG
<b>Member at Large, EOAS Divison / Représentant (te) de la division STOA</b>	Nat Rutter
<b>Member at Large, LS Divison / Représentant (te) de la division SV</b>	
<b>Member at Large, MPS Divison / Représentant (te) de la division MSP</b>	
<b>EXECUTIVE / EXÉCUTIF</b>	<b>2017-2018</b>
<b>Academy President / Président de l'académie</b>	Vijaya Raghavan
<b>Academy President Past /Président sortant</b>	Jamal Deen
<b>Academy President Elect /Président sortant</b>	
<b>Chair – Past Presidents’ Council</b>	Lawrence Mysak
<b>Academy Secretary / Secrétaire de l'académie</b>	Gary Slater
<b>Director, ASE Division /Directeur, SAG</b>	Claudio Canizares
<b>Director, EOAS Division / Directeur, STOA</b>	Barbara Sherwood-Lollar
<b>Director, LS Division / Directrice, SV</b>	Michel Tremblay
<b>Director, MPS Division / Directeur, MSP</b>	Bruce Gaulin
<b>ACADEMY COMMITTEE FOR THE NOMINATION OF OFFICERS / COMITÉ DE NOMINATIONS DES DIREGEANTS DE L'ACADÉMIE</b>	<b>2017-2018</b>
<b>CHAIR, Past-President as Chair / Président sortant</b>	Jamal Deen
<b>Division Representative, ASE / Représentant (te) de la division SAG</b>	Claudio Canizares



<b>Division Representative, ASE / Représentant (te) de la division SAG</b>	
<b>Division Representative, EOAS / Représentant (te) de la division STOA</b>	Barbara Sherwood-Lollar
<b>Division Representative, EOAS / Représentant (te) de la division STOA</b>	
<b>Division Representative, LS / Représentante de la division SV</b>	Michel Tremblay
<b>Division Representative, LS / Représentant (te) de la division SV</b>	Carol Cass
<b>Division Representative, MPS / Représentant (te) de la division MSP</b>	Bruce Gaulin
<b>Division Representative, MPS / Représentant (te) de la division MSP</b>	
<b>ACADEMY COMMITTEE FOR THE SELECTION OF NEW FELLOWS / COMITÉ DES CANDIDATURES DES NOUVEAUX MEMBRES</b>	<b>2017-2018</b>
<b>Academy President / Président de l'académie</b>	Vijaya Raghavan
<b>Past-President / President Elect/ Président sortant-élu</b>	Jamal Deen
<b>Academy Secretary / Secrétaire de l'académie</b>	Gary Slater
<b>Director, ASE Division / Directeur, SAG</b>	Claudio Canizares
<b>Director, EOAS Division / Directeur, STOA</b>	Barbara Sherwood-Lollar
<b>Director, LS Division / Directrice, SV</b>	Michel Tremblay
<b>Director, MPS Division / Directeur, MSP</b>	Bruce Gaulin
<b>APPLIED SCIENCES AND ENGINEERING DIVISION / DIVISION DES SCIENCES APPLIQUÉES ET GÉNIE</b>	
	<b>2017-2018</b>
<b>Division Director / Directeur de la division</b>	Claudio Canizares
<b>Division Secretary / Secrétaire de la division</b>	Ajay Dalai
<b>Member at Large / Représentant(e) de la division</b>	Flora NG
<b>DIVISION NOMINATING COMMITTEE / COMITÉ DES NOMINATIONS DE LA DIVISION</b>	<b>2017-2018</b>
<b>CHAIR / PRÉSIDENT</b>	Safa Kasap
<b>Division Representative / Représentant(e) de la division</b>	Yusuf Altintas
<b>Division Representative / Représentant(e) de la division</b>	Roberto Morandotti
<b>Division Representative / Représentant(e) de la division</b>	Hosalli S Ramaswamy
<b>Division Representative / Représentant(e) de la division</b>	Javad Mostaghimi
<b>Division Representative / Représentant(e) de la division</b>	Xueliang Sun
<b>Division Representative / Représentant(e) de la division</b>	Stephen Larter
<b>DCSNF</b>	
<b>DIVISION COMMITTEE FOR THE SELECTION OF NEW FELLOWS / COMITÉ DES CANDIDATURES DES NOUVEAUX MEMBRES</b>	<b>2017-2018</b>



<b>CHAIR, Division Director / PRÉSIDENT, Directeur de la division</b>	Claudio Canizares
<b>Division Secretary / Secrétaire de la division</b>	Ajay Dalai
<b>Division Representative / Représentant(e) de la division</b>	Clement Gosselin
<b>Division Representative / Représentant(e) de la division</b>	Yusuf Altintas
<b>Division Representative / Représentant(e) de la division</b>	Praveen Jain
<b>Division Representative / Représentant(e) de la division</b>	Weihua Zhuang
<b>Division Representative / Représentant(e) de la division</b>	Jingxu Zhu
<b>Division Representative / Représentant(e) de la division</b>	Warren Finlay
<b>Division Representative / Représentant(e) de la division</b>	Zhenghe Xu
<b>Division Representative / Représentant(e) de la division</b>	Ned Djilali
<b>Division Representative / Représentant(e) de la division</b>	Ke Wu
<b>Division Representative / Représentant(e) de la division</b>	David Layzell
<b>EARTH, OCEAN AND ATMOSPHERIC SCIENCES DIVISION / DIVISION DES SCIENCES DE LA TERRE, DE L'OcéAN ET DE L'ATMOSPHÈRE</b>	
	<b>2017-2018</b>
<b>Division Director / Directeur de la division</b>	Barbara Sherwood-Lollar 2017-2019
<b>Division Secretary / Secrétaire de la division</b>	Ted Evans 2017-2019
<b>Member at Large / Représentant(e) de la division</b>	Nat Rutter 2017-2019
<b>DIVISION NOMINATING COMMITTEE / COMITÉ DES NOMINATIONS DE LA DIVISION</b>	
	<b>2017-2018</b>
<b>CHAIR / PRÉSIDENT</b>	Nat Rutter 2017-2019
<b>Division Representative / Représentant(e) de la division</b>	Mark Hannington 2017-2018
<b>Division Representative / Représentant(e) de la division</b>	Peter Dillon 2017-2018
<b>Division Representative / Représentant(e) de la division</b>	Kurt Konhauser 2017-2019
<b>Division Representative / Représentant(e) de la division</b>	VACANT
<b>DCSNF</b>	
<b>DIVISION COMMITTEE FOR THE SELECTION OF NEW FELLOWS / COMITÉ DES CANDIDATURES DES NOUVEAUX MEMBRES</b>	
	<b>2017-2018</b>
<b>CHAIR, Division Director / PRÉSIDENT, Directeur de la division</b>	Barbara Sherwood-Lollar 2017-2019
<b>Division Secretary / Secrétaire de la division</b>	Ted Evans 2019-2019
<b>Division Representative / Représentant(e) de la division</b>	Larry Heaman 2017-2019
<b>Division Representative / Représentant(e) de la division</b>	Dominique Weis 2017-2019
<b>Division Representative / Représentant(e) de la division</b>	Tim Moore 2017-2018
<b>Division Representative / Représentant(e) de la division</b>	Bernard Boudreau 2017-2020
<b>Division Representative / Représentant(e) de la division</b>	Anne de Vernal 2017-2018

<b>Division Representative / Représentant(e) de la division</b>	David Neelin 2017-2019
<b>LIFE SCIENCES DIVISION / DIVISION DES SCIENCES DE LA VIE</b>	
	<b>2017-2018</b>
<b>Division Director / Directeur de la division</b>	Michel Tremblay (McGill)
<b>Division Secretary / Secrétaire de la division</b>	Carol Cass (U of Alberta)
<b>Member at Large / Représentant(e) de la division</b>	
<b>DIVISION NOMINATING COMMITTEE / COMITÉ DES NOMINATIONS DE LA DIVISION</b>	<b>2017-2018</b>
<b>CHAIR / PRÉSIDENT</b>	Amira Klip (Toronto)
<b>Division Representative / Représentant(e) de la division</b>	James Davie (Manitoba)
<b>Division Representative / Représentant(e) de la division</b>	Morag Park (McGill)
<b>Division Representative / Représentant(e) de la division</b>	Frank Sicheri (Toronto)
<b>Division Representative / Représentant(e) de la division</b>	Keith Humphries (UBC)
<b>DIVISION COMMITTEE FOR THE SELECTION OF NEW FELLOWS / COMITÉ DES CANDIDATURES DES NOUVEAUX MEMBRES</b>	<b>2017-2018</b>
<b>CHAIR, Division Director / PRÉSIDENT, Directeur de la division</b>	Michel Tremblay (McGill)
<b>Division Secretary / Secrétaire de la division</b>	Carol Cass (U of Alberta)
<b>Division Representative / Représentant(e) de la division</b>	Louis Bernachez (U Laval)
<b>Division Representative / Représentant(e) de la division</b>	Janet Rossant (U of T)
<b>Division Representative / Représentant(e) de la division</b>	Michael Gray (Dalhousie)
<b>Division Representative / Représentant(e) de la division</b>	Ruth McPherson U of O)
<b>Division Representative / Représentant(e) de la division</b>	Sam Aparicio (BC)
<b>Division Representative / Représentant(e) de la division</b>	Marek Michalak (u of Alberta)
<b>Division Representative / Représentant(e) de la division</b>	
<b>MATHEMATICAL AND PHYSICAL SCIENCES DIVISION / DIVISION DES MATHÉMATIQUES ET SCIENCES PHYSIQUES</b>	
	<b>2017-2018</b>
<b>Division Director / Directeur de la division</b>	Bruce Gaulin
<b>Division Secretary / Secrétaire de la division</b>	
<b>Member at Large / Représentant(e) de la division</b>	
<b>DIVISION NOMINATING COMMITTEE / COMITÉ DES NOMINATIONS DE LA DIVISION</b>	<b>2017-2018</b>



<b>CHAIR / PRÉSIDENT</b>	TK Sham
<b>Division Representative / Représentant(e) de la division</b>	
<b>Division Representative / Représentant(e) de la division</b>	
<b>Division Representative / Représentant(e) de la division</b>	
<b>Division Representative / Représentant(e) de la division</b>	
<b>DCSNF</b> DIVISION COMM. FOR THE SELECTION OF NEW FELLOWS / COMITÉ DES CANDIDATURES DES NOUVEAUX MEMBRES	<b>2017-2018</b>
<b>CHAIR, Division Director / PRÉSIDENT, Directeur de la division</b>	Bruce Gaulin (McMaster)
<b>Division Representative / Représentant(e) de la division</b>	Julio Navarro (U Victoria) Astro
<b>Division Representative / Représentant(e) de la division</b>	Christian Genest (McGill)-Math
<b>Division Representative / Représentant(e) de la division</b>	Bruce Lennox (McGill) - Chem
<b>Division Representative / Représentant(e) de la division</b>	Gail Murphy (UBC) - Comp Sci
<b>Division Representative / Représentant(e) de la division</b>	Mary Ann White (Dalhousie) - Chem
<b>Division Representative / Représentant(e) de la division</b>	Eugene Fiume (Toronto) - Comp Sci
<b>Division Representative / Représentant(e) de la division</b>	Ian Goulden (Waterloo)- Math
<b>Academy of Science / Awards Committee</b>	
	<b>2017-2018</b>
<b>Past-President, Academy III (Chair)</b>	Jamal Deen
<b>Secretary, Academy III</b>	Gary Slater
<b>Director, ASE Division</b>	Claudio Canizares
<b>Director, EOAS Division</b>	Barbara Sherwood-Lollar
<b>Director, LS Division</b>	Michel Tremblay
<b>Director, MPS Division</b>	Bruce Gaulin

## Appendix 4 – Facets; pages 13 to 14

***FACETS*** Endorsed as Official Journal of the Royal Society of Canada’s Academy of Science  
*Appointment highlights new innovative partnership between Canada’s National Science Academy and Canada’s foremost science publisher*

**Ottawa, ON (June 20, 2017)** - Canadian Science Publishing, an independent, not-for-profit scholarly publisher dedicated to serving the needs of researchers and their communities, and the Royal Society of Canada (RSC), the country’s senior collegium of distinguished scholars, artists and scientists, announced today that *FACETS* has been selected as the official journal of the RSC’s Academy of Science. *FACETS* is Canada’s first and only multidisciplinary open access science journal that publishes and shares rigorously peer-reviewed science which matters to Canadians from policy and regulatory frameworks, to cross-disciplinary research and scientific approaches that address questions and issues in new ways.

“I am extremely proud to call *FACETS* the official journal of the Academy of Science,” says Dr. Jules Blais, Editor-in-Chief of *FACETS*. “The appointment of an official journal by the Royal Society of Canada signals the ever important need for researchers and the organizations that support them to come together to solve the complex scientific problems facing our society through sound scientific research and widespread dissemination to all interested readers.”

“Many National Academies around the world have official journals and today I am proud that the Academy of Science joins that list with the selection of *FACETS* its official journal,” says Jamal Deen, President, Academy of Science, Royal Society of Canada. “This is the first time in our history of over 130 years that we have selected an official journal, which points to the calibre of *FACETS* and its publishing process. The Academy of Science is pleased to offer a place for its Fellows and College members to publish their work, in accordance with the highest standards of scientific integrity. This partnership signifies the continued outreach and exposure that the Royal Society of Canada is working to achieve for its community.”

“I am proud to be both a Fellow of the Royal Society of Canada and an Editor of *FACETS* for this historic appointment,” says Dr. John Smol. “The validation and communication of science is arguably the most pressing issue of our time. Formalizing a relationship between this Canadian institution and Canada’s open access science journal that encourages multi- and interdisciplinary approaches is an important step in ensuring the effectiveness of our scientific output in Canada while ensuring that this research is openly accessible for all readers,” continues Dr. Smol. “*FACETS* is taking an important step not only in validating and publishing scientific research but also in connecting researchers and readers on the science that matters most to them. RSC Fellows and College members will enjoy the increased





exposure of their work through a variety of science communication approaches coordinated by *FACETS*.”

“The work of the science publisher to validate and formalize the research output through peer review continues to be the pillar of our scientific process. Formalizing a relationship with the most well respected organization of scientists in Canada helps *FACETS* enhance the connection between researchers and readers through our state-of-the-art platform,” adds Dr. Blais. “We look forward to working with the RSC Fellows and College members to validate, publish, and promote the very best research that our country has to offer.”

As part of this appointment, Canadian Science Publishing has become the 57<sup>th</sup> Institutional Member of the Royal Society of Canada. The Institutional Membership program was designed for cross-pollination of support, ideas, and collaboration between the Royal Society of Canada and member institutions.

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**Appendix 5 - New Fellows Orientation Manual; pages 15 to 21**

**Orientation Manual  
Fellows of Academy III  
Royal Society of Canada**

**DRAFT-2: 13 November 2017**

- Welcome from Academy III President
- What is the RSC?
- What is Academy III?
- What is the role of Academy III?
- What are the responsibilities of the Fellows of Academy III?
- Selected demographic information on the Academy III Fellowship



### **Welcome from Academy III President – Dr. M. Jamal Deen**

It gives me great pleasure to welcome all new Fellows of the Academy of Science. Our Academy is a vibrant, active academy within the Royal Society of Canada (RSC). We are very proud of the work we have done within RSC that includes serving on important committees such as Equity and Diversity, Awards and Recognition, Fellowship, International Affairs, Finance, and Interventions in the Public Interest. We actively participated in several Expert Panels and the excellent and timely reports that were subsequently produced.

Our Academy, divided into four divisions, is well-positioned to bring the Society's membership together beyond traditional barriers to address current and future challenges in energy, environmental sustainability and health, to name a few. Engaging with the other two sister academies is important in the 21<sup>st</sup> century, especially since the astounding scientific and technological advances that continue at an accelerating pace must also consider the important accompanying human and social issues. If our Academy is to contribute to resolving many national and global issues, interdisciplinary collaboration is vital. Therefore, it is important that we strategically expand and strengthen interactions not only with our sister academies within RSC, but also worldwide, to address issues of mutual interest such as health, security, energy, and environment.

As an Academy, we need to continue our great efforts on timely, important and forward looking expert panels as well as engaging the public with lectures to improve our public profile and image, and to promote the critical role of science in our society. It is important that we convey the message that great science leads to new and fruitful applications, which in turn stimulate growth and prosperity in the private sector, better public policies, and better living conditions. Therefore, we need to continue to raise the public understanding and capture their interest in our Academy members' role in addressing high-impact issues, some of which were mentioned above. When the public is engaged, they can appreciate the value and importance of our members work, and the importance of our Academy to our national interests. Using the knowledge, expertise and stature of our members, we must continue to work diligently to increase the national and international influence of the Academy. Our Academy's membership should be a source of reliable and credible knowledge and information, and sound, substantiated views for policy makers, the private and public sectors, and the public.

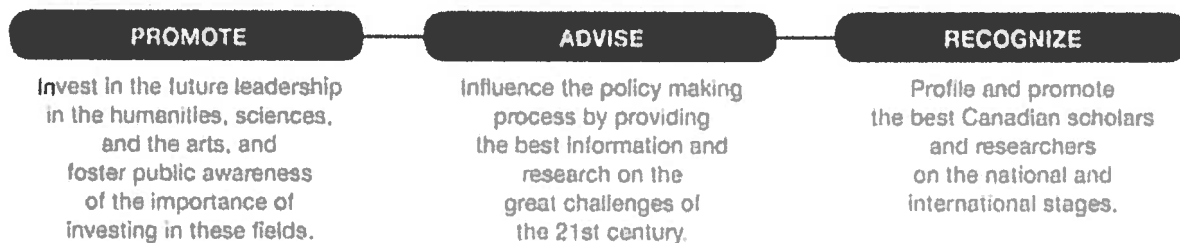
As Fellows, we must continue working with colleagues in our two other Academies and institutions towards making our Academy's membership more representation of Canada's diversity. In our activities, we should maintain the highest standards of intellectual and professional integrity and transparency. In all these initiatives, we need to involve more members with fresh new energy, collectively contributing towards our bright future as the home of the best and brightest "body of independent scholars, researchers and creative people in Canada" and who "can provide intellectual leadership for the betterment of Canada and the world". While this century presents challenges, as an Academy, we should seek to develop programs to turn these challenges into opportunities to build a sustainable, thriving future for our Academy and Canada.



### What is the RSC?

The Royal Society of Canada (RSC): The Academies of Arts, Humanities and Sciences of Canada was established under an Act of Parliament in 1883 as Canada’s National Academy, the senior collegium of distinguished scholars, artists and scientists in the country. The primary objective of the Society is to promote learning and research in the arts, the humanities and the natural and social sciences.

As Canada’s senior national academy, the RSC exists to promote Canadian research and scholarly accomplishment in both of Canada’s official languages, to recognize academic and artistic excellence, and to advise governments, non-governmental organizations, and Canadians generally on matters of public interest. The RSC undertakes a diverse range of initiatives and sponsors numerous activities to fulfill its mandate, including, but not limited to, bestowing awards and honours, organizing and hosting symposia, and conducting Expert Panels.



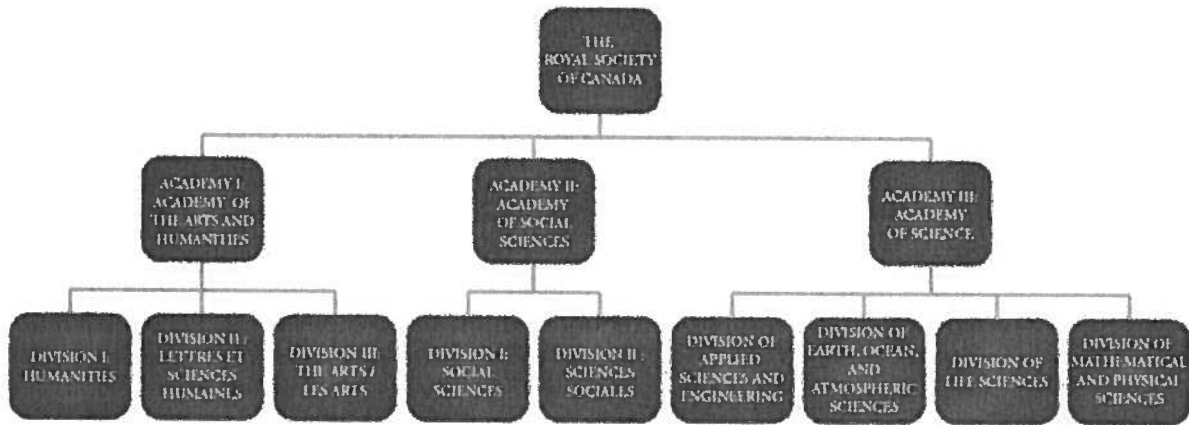
### What is Academy III?

The Royal Society of Canada is an institution encompassing three Academies. The overall direction of the Society is given by the Society’s Council, an Executive Committee of the Council, and the Society’s Executive Officers, as assisted by several non-executive officers, several standing and ad hoc committees, and the President’s Advisory Council. The affairs of Academies and their Divisions are managed by their Council and Executive Officers and their several standing and ad hoc committees.

Academy III is the Academy of Science. There are four Divisions of Academy III:

- Applied Sciences and Engineering;
- Earth, Ocean and Atmospheric Sciences;
- Life Sciences; and
- Mathematical and Physical Sciences.

Each Division of Academy III is comprised of both English-speaking and French-speaking Fellows. The fellowship of Academy III (currently numbering ??? Fellows) comprises distinguished men and women from all branches of learning who have made remarkable contributions to the sciences, within Canada and internationally.



**What is the role of Academy III?**

Academy III plays a key role in advising the RSC about current scientific issues of importance to Canadians (i.e. through The Committee on Interventions in the Public Interest). Additionally, on request from external agencies, including industry and government, Fellows of the Academy provide expert independent opinions on request. These Expert Panels, struck as a public service to Canadians, have provided insight, advice and recommendations to Canadian governments, industry and NGOs on public policy matters ranging from the health effects of asbestos to early childhood education. The work of the RSC’s Expert Panels ensures that there is independent, comprehensive, and evidenced-based input into the public policy development process in Canada. For example, an Expert Panel was established in 2015 in response to a request from the Canadian Energy Pipeline Association (CEPA) and the Canadian Association of Petroleum Producers (CAPP).

The panel was asked to address a number of questions, including:

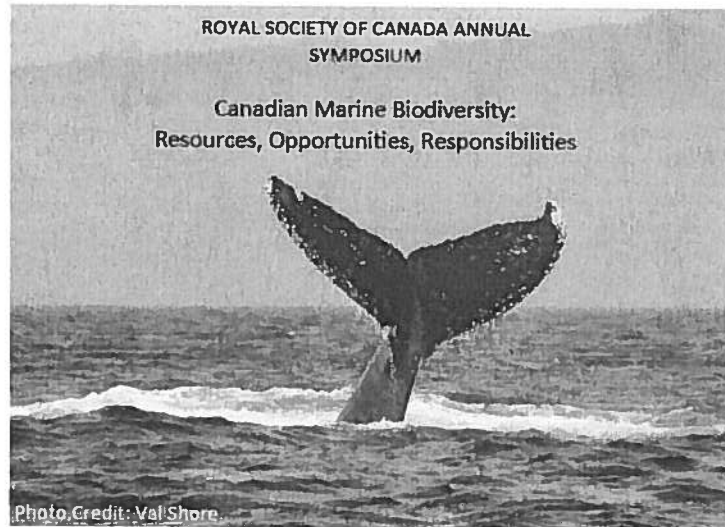
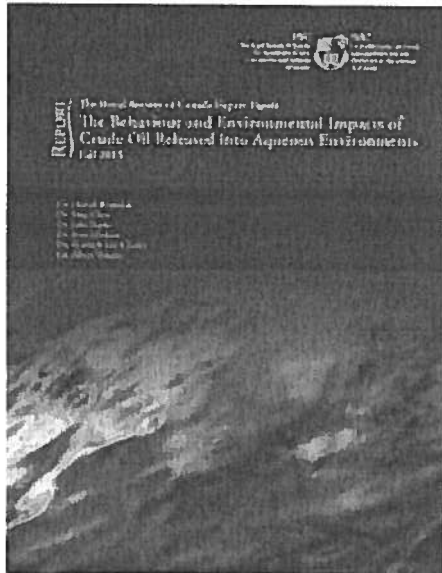
- How do the various crude oils compare in their chemical composition and toxicity to organisms in aquatic ecosystems?
- Is the research community able to relate, with reliable predictions, the chemical, physical and biological properties of crudes to their behaviour, toxicity and ability to be remediated in water and sediments?
- How should these scientific insights be used to inform optimal strategies for spill preparedness, spill response and environmental remediation?

The resultant report was published by the RSC in 2015:

***The Behaviour and Environmental Impacts of Crude Oil Released into Aqueous Environments***

**Abstract:** A solid scientific understanding of the behaviour and environmental impacts of crude oil if accidentally released into aqueous environments can make an important contribution to the identification of optimal strategies for spill preparedness, spill response, and environmental remediation. A panel of experts is asked to review the state of the science on how various kinds of

conventional and unconventional crude oils transported in North America interact with the surface waters and associated sediments (suspended, shoreline, ocean/lake/river floor) in marine, estuarine and freshwater settings under a wide range of environmental conditions.



Fairmont Empress | November 26, 2015 | 8:30 am – 5:30 pm

The Academy of Science also organizes thematic symposia, an example of which is the symposium of 2015. Home to the longest oceanic border in the world, Canada is a logical choice of country in which to discuss marine biodiversity and Canada's National Academy offered an appropriate venue within which such discussions could take place. The 2015 Symposium, entitled "*Canadian Marine Biodiversity: Resources, Opportunities, Responsibilities*", built upon the foundation of knowledge, perspective, and recommendations provided by the RSC's 2012 Expert Panel on *Sustaining Canadian Marine Biodiversity*. That Panel concluded that Canada's progress in fulfilling national and international obligations, impressive in some aspects, is generally impaired by regulatory conflict, unhelpfully discretionary legislation, and an inconsistent, unduly slow pace of statutory and policy implementation. With presentations from ten individuals of national and international renown presenting their work, the 2015 Annual Symposium offered interdisciplinary perspective, thoughtful critiques, viable means of strengthening Canada's oceans stewardship, and passion, and left several lasting impressions among symposium participants:

- Foremost is the realization that Canada is an ocean nation. From a purely geographical perspective, the ocean stewardship responsibilities borne by Canada are arguably greater than those of any other country. And given that three-quarters of Canada's coastline is located in Nunavut, ocean issues in Canada are de facto Arctic issues, a region with which Canadians strongly identify.
- In 2009, the Royal Society of Canada took a leadership role by establishing the Expert Panel on

Canadian marine biodiversity. In 2015, the RSC continued that leadership by making this topic the central theme of its Annual Symposium. The symposium can be viewed as a tangible and promising step in connecting the new federal government, and Canadians, with the empirically sound and practically realistic advice that can be proffered by Canada's National Academy.

In 2015 the RSC published a Position Paper that called for the establishment of a Chief Scientist to coordinate and ensure evidence-informed decision-making in Canada. In 2016, the Honourable Kirsty Duncan, Minister of Science, wrote to the RSC asking for advice on the establishment of the position of Chief Science Officer. The RSC's response incorporated feedback from a number of Fellows who had a depth of experience in the area, and was well-received by Minister Duncan.

Finally, Fellows of Academy III also contribute through service on a wide variety of other Academy III and RSC committees, including Equity and Diversity, Awards and Recognition, Fellowship, International Affairs, Finance and Interventions in the Public Interest.

### **Committees in Academy III**

- COUNCIL/ CONSEIL
- EXECUTIVE / EXÉCUTIF
- ACADEMY COMMITTEE FOR THE NOMINATION OF OFFICERS / COMITÉ DE NOMINATIONS DES DIREGEANTS DE L'ACADÉMIE
- ACADEMY COMMITTEE FOR THE SELECTION OF NEW FELLOWS / COMITÉ DES CANDIDATURES DES NOUVEAUX MEMBRES

### **APPLIED SCIENCES AND ENGINEERING DIVISION / DIVISION DES SCIENCES APPLIQUÉES ET GÉNIE**

- DIVISION NOMINATING COMMITTEE / COMITÉ DES NOMINATIONS DE LA DIVISION
- DCSNF - DIVISION COMMITTEE FOR THE SELECTION OF NEW FELLOWS / COMITÉ DES CANDIDATURES DES NOUVEAUX MEMBRES

### **EARTH, OCEAN AND ATMOSPHERIC SCIENCES DIVISION / DIVISION DES SCIENCES DE LA TERRE, DE L'OcéAN ET DE L'ATMOSPHÈRE**

- DIVISION NOMINATING COMMITTEE / COMITÉ DES NOMINATIONS DE LA DIVISION
- DCSNF - DIVISION COMMITTEE FOR THE SELECTION OF NEW FELLOWS / COMITÉ DES CANDIDATURES DES NOUVEAUX MEMBRES

### **LIFE SCIENCES DIVISION / DIVISION DES SCIENCES DE LA VIE**

- DIVISION NOMINATING COMMITTEE / COMITÉ DES NOMINATIONS DE LA DIVISION
- DIVISION COMMITTEE FOR THE SELECTION OF NEW FELLOWS / COMITÉ DES CANDIDATURES DES NOUVEAUX MEMBRES

### **MATHEMATICAL AND PHYSICAL SCIENCES DIVISION / DIVISION DES MATHÉMATIQUES ET SCIENCES PHYSIQUES**

- DIVISION NOMINATING COMMITTEE / COMITÉ DES NOMINATIONS DE LA DIVISION
- DCSNF - DIVISION COMM. FOR THE SELECTION OF NEW FELLOWS / COMITÉ DES CANDIDATURES

DES NOUVEAUX MEMBRES

**Academy of Science Awards Committee**

- Bancroft Award (bi-annual)
- Flavelle Medal (bi-annual)
- Henry Marshall Tory Medal (bi-annual)
- John L. Synge Award (bi-annual)
- McLaughlin Medal (annual)
- Miroslaw Romanowski Medal (annual)
- Willet G. Miller Medal (bi-annual)

**What are the responsibilities of the Fellows in Academy III?**

- Each inductee shall take the Royal Society of Canada Oath and sign the Charter Book.  
 “We who have hereunto subscribed, do hereby promise, each for himself/herself, that we will endeavour to promote the good of RSC and to pursue the end for which it was founded; that we will be present at meetings of RSC as often as we conveniently can; and that we will observe the RSC By-Laws and regulations.”
- Undertake to promote the interests and objectives of the Academy of Science and RSC/
- Pay membership dues.
- Stand for election as Officers, Members of Council or other elected positions of the Academy or RSC.
- Vote in affairs of the Society and of the Academies and Divisions to which they belong, including elections of Officers or other officials of the Society or the Academies.
- Not be convicted of a serious crime as the Council of the Society may terminate the membership of a Fellow.
- Not to have engaged in serious scholarly misconduct, such as, but not limited to, deliberate plagiarism or falsification of data as the Council of the Society may terminate the membership of a Fellow.

**Selected demographic information on the Academy III Fellowship**

The the fellowship comprises four categories: Honorary Fellows, Regularly Elected Fellows, Specially Elected Fellows and Foreign Fellows. They are over 2000 Canadian scholars, artists, and scientists, peer-elected as the best in their field tp fellowship in RSC. Some selected demographic information of the Academy of Science’s fellowship are provided below.

**Demographic Information:**

<b>Men:</b>	<b>Average age:</b>	<b>English:</b>	<b>French:</b>
<b>Women:</b>	<b>Average age:</b>	<b>English:</b>	<b>French:</b>

**Other demographic information:**







*Partnership Group for Science and Engineering (PAGSE)*

*Partenariat en faveur des sciences et de la technologie (PFST)*

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## **PAGSE Annual Activity Report**

**1 January 2017 – 31 December 2017**

The Partnership Group for Science and Engineering (PAGSE; [www.pagse.org](http://www.pagse.org)) is a cooperative association of national organizations in Science and Engineering. It was formed in June 1995 at the invitation of the Academy of Science of the Royal Society of Canada. The national organizations that comprise PAGSE represent almost 60,000 individual members from industry, academia, and government sectors. They work collectively to represent the Canadian science and engineering community to the Government of Canada, and to advance research and innovation for the benefit of Canadians. PAGSE is *not* a lobby group. It does not seek an audience to advance the cause of specific science and engineering initiatives. Rather, its intent is to address the broader issues of science and engineering policy at the national level.

### **PAGSE Members and Representatives**

Maria DeRosa, Carleton University, is the Chair of PAGSE.

A full list of PAGSE Member Organizations and representatives can be found appended to this report and at [www.pagse.org/en/links.htm](http://www.pagse.org/en/links.htm).

### **Bacon & Eggheads**

PAGSE, in partnership with the Natural Sciences and Engineering Research Council (NSERC), CANARIE Inc, and many other organizations sponsors a monthly breakfast meeting held on Parliament Hill, known as “*Bacon and Eggheads*”. Speakers at the meetings inform parliamentarians about recent advances in science and engineering. In 2017 PAGSE organized the presentations listed below.

#### [Unnatural tremors: the science of fracking and earthquakes](#)

Gail Atkinson, Western University  
Thursday February 9, 2017

#### [Can I Help You? The Future of Socially Assistive Robots in Healthcare](#)

Goldie Nejat, University of Toronto  
Thursday March 9, 2017

#### [Building a climate-smart world: How development research helps the global population adapt to climate change](#)

Robert Hofstede, International Development Research Centre  
Thursday April 6, 2017

#### [Next-generation technologies for tomorrow’s crops: Getting to the roots of global food security](#)

Leon Kochian, University of Saskatchewan  
May 4, 2017

### [Deep Learning and Artificial Intelligence: Is Canada ready for the challenge?](#)

Yoshua Bengio, Université de Montréal

September 28, 2017

### [Uncharted Waters: A scientific glimpse into the future of the Arctic Ocean](#)

Jay Cullen, University of Victoria

October 26, 2017

### [30 Year Journey: winning the battle against Hepatitis C](#)

Michael Houghton, University of Alberta

November 23, 2017

## **SciEng Pages (formerly SciencePages)**

*SciEng Pages* is an initiative undertaken by the Partnership Group for Science and Engineering (PAGSE) to provide brief, evidence based assessments of topical science and engineering topics to Parliamentarians and the public. The Science Media Centre of Canada (SMCC) was asked for 3 SciEng Pages as a trial by the Federal S&T Secretariat on these topics: Genomics, Why Science Matters, and Evidence-Based Decision Making. The SMCC submitted these in March 2017, and they are awaiting approval from the Science minister's office. Upon approval, the goal will be to promote these three documents on the PAGSE website and at the Bacon and Egghead Breakfasts.

To view all the SciEng Pages publications please visit the SciEng Pages website. <http://sciengpages.ca/> or <http://sciengpages.ca/fr/>

## **PAGSE Council Meetings**

Guests, representing science and engineering in the government and industry sectors, are invited to PAGSE Council meetings to present their perspectives on science and engineering in Canada, on the activities of their organizations, as well as the potential issues and challenges that they would like to see PAGSE address. Members also consider federal activities and reports and how best to promote and sustain Canada's scientific base. The meetings are held at the University of Ottawa. During the last year PAGSE has welcomed the following guests:

- April 25, 2017: Ted Hewitt, President, Social Science and Humanities Research Council
- June 12, 2017: Martha Crago, Member of the Fundamental Science Review Panel and Incoming Vice Principal (Research and Innovation), McGill University
- October 10, 2017 : Roseann Runte, President and CEO, Canada Foundation for Innovation(CFI)

## **Meetings with Other Organizations**

- March 2017: Canadian Federation for Earth Sciences Annual General Meeting
- October 2017: Council of Ontario Universities

## **Submissions to Parliamentary Committees and Consultations**

### **House of Commons Finance Committee**

PAGSE submitted a brief to the House of Commons Standing Committee on Finance in August 2017.

#### **Summary of the August 2017 Submission**

Canadians recognize that our health, prosperity, and security depend on science, technology, and innovation (STI).<sup>1</sup> From the tools we use to communicate, to the energy that powers our homes, businesses, and transportation, to the treatments and diagnostics that keep us healthy, STI touches every aspect of our daily lives.

Basic research is the foundation and fuel for STI. Breakthrough advances occur when we have the opportunity to answer fundamental questions about ourselves and the natural world around us. Sustained fundamental research is required to continually advance STI. While Canada has long been a source of high quality and high impact research, in recent years we have witnessed an erosion of our competitiveness in comparison to our international peers. Canada's Fundamental Science Review<sup>2</sup> affirmed this point and its recommendations on how to reverse the trend have received widespread support from the scientific community<sup>3</sup> and the general public.<sup>4</sup>

Given the increasingly competitive global environment and the complexity of challenges we face, investments in basic research have never been more critical for Canadians. In view of the role of research in spurring innovation and increasing productivity, and the need for research to inform evidence-based policy-making and to inspire and educate the next generation of innovators, investing in basic research is one of the most important and highest-yield investments in Canada's competitiveness that our government can make.

**The Partnership Group for Science and Engineering (PAGSE) recommends that the Government begin to implement the recommendations from Canada's Fundamental Science Review. In particular, we recommend that the Government:**

- **Increase its investment in independent, investigator-led basic research to improve our international competitiveness. (R6.1)**
- **Increase its investment in scholarship and fellowship programs to ensure a stable pipeline of innovators for the future. (R7.1)**

[The complete submission is available on the PAGSE website](#)

For further information on PAGSE activities, please visit our website [www.pagse.org](http://www.pagse.org)

## **PAGSE Members**

Canadian Academy of Engineering (Representative: *Kevin Goheen*)  
Canadian Aquatic Resources Section of the American Fisheries Society (Representative: *Steven Cooke*)  
Canadian Association for Neuroscience (Representative: *Katalin Toth*)  
Canadian Association of Physicists (Representative: *Francine Ford*)  
Canadian Conference for Fisheries Research (Representative: *Steve Cooke*)  
Canadian Federation of Earth Sciences (Representative: *Chris Burn*)  
Canadian Geophysical Union (Representative: *Rich Petrone*)  
Canadian Meteorological and Oceanographic Society (Representative: *Gordon Griffith*)  
Canadian Physiological Society (Representative: *Catherine Chan*)  
Canadian Quaternary Association (Representative: *John P. Smol*)  
Canadian Rivers Institute (Representative: *Anne Levesque*)  
Canadian Society of Microbiologists (Representative: *Thien-Fah-Mah*)  
Canadian Society of Plant Biologists (Representative: *Owen Rowland*)  
Canadian Society of Zoologists (Representative: *Katie Gilmour*)  
Canadian Society for Chemical Engineering (Representative: *Roland Andersson*)  
Canadian Society for Chemical Technology (Representative: *Roland Andersson*)  
Canadian Society for Chemistry (Representative: *Roland Andersson*)  
Canadian Society for Ecology and Evolution (Representative: *Jeremy Kerr*)  
Canadian Society for Molecular Biosciences (Representative: *Kristin Baetz*)  
Chemical Institute of Canada (Representative: *Roland Andersson*)  
Engineering Institute of Canada (Representative: *Branislav Djokic*)  
Geoscientists Canada (Representative: *Mark Priddle*)  
IEEE Canada (Representative: *Voicu Groza*)  
Society of Canadian Limnologists (Representative: *Jérôme Marty*)  
Statistical Society of Canada (Representative: *Jack Gambino*)

## **Supporting Organizations**

Canadian Science Publishing  
CANARIE Inc.  
Coherent Advice  
Genome Canada  
Google Canada  
International Development Research Centre  
Natural Sciences and Engineering Research Council (NSERC)  
Royal Society of Canada (RSC)  
CanHep C  
Li Ka-shing Institute of Virology

Western University  
Department of Mechanical and Industrial Engineering, University of Toronto  
University of Saskatchewan  
Université de Montréal  
University of Victoria

## **Applied Science and Engineering Division of Academy of Science**

Date: November 25, 2017

Time: 12pm

Place: Fairmont – East/Midway Ballroom, Winnipeg, MB

### **AGENDA:**

1. Welcome and Opening Remarks
2. Approval of agenda
3. Adoption of the minutes of the previous meeting
4. Business arising from the minutes
5. Fellows Inducted 2017
6. Division Committee for the Selection of New Fellows 2018
7. Dates, Selection Process
8. New initiatives: Medals, Symposium, etc.
9. Other business.
10. Adjournment

Report of the  
**Annual Business Meeting of the**  
Division of Earth, Ocean and Atmospheric Sciences of the  
Academy of Science of the RSC

Date: November 25, 2017

Place: Winnipeg, MB

**Present:** David Barber, Lawrence Mysak, Nat Rutter, Frank Wania, Stephen Wyatt

**1. Introduction**

As neither Division Director Barbara Sherwood Lollar nor Division Secretary Michael Evans was present, Nat Rutter acted as the Chair for this meeting.

**2. Approval of Agenda**

The agenda was approved without amendments by consensus.

**3. Report of the 2016 Divisional Business Meeting**

The report of last year's business meeting was distributed and approved by consensus.

**4. Welcome to the new Fellows, Scholar and Medal Winners**

Nat Rutter introduced Stephen Wyatt (University of Moncton), who has been named to the College of new Scholars, Artists and Scientists and Frank Wania (University of Toronto Scarborough), who is a new Fellow in the EOAS Division. New fellows within the Division not present are David Blowes (University of Waterloo), Kurt Konhauser (University of Alberta) and Brendan Murphy (St. Francis Xavier University). Nat Rutter also noted that Daniel Pauly (University of British Columbia) was this year's recipient of the Sir John William Dawson Medal and Keith W. Hipel (University of Waterloo) was awarded the Miroslaw Romanowski Medal.

In the forthcoming year, nominations are sought for the following awards (with a March 2018 deadline): the Willet G. Miller Medal, Bancroft Award, and the Miroslaw Romanowski Medal.

**5. Division Officers and committee members for November 2017 to November 2018**

Nat Rutter conveyed that Barbara Sherwood Lollar and Michael Evans would be continuing as Division Chair and Secretary, respectively. He also distributed a sheet with the composition of the Nomination Committee and the Fellow Selection Committee. They are:

**Nomination Committee:**

Nat Rutter (Chair, 2017-2019)  
Mark Hannington (2017-2018)  
Peter Dillon (2017-2018)  
Kurt Konhauser (2017-2019)  
Richard Thomson (2017-2020)

**Fellow Selection Committee:**

Barbara Sherwood Lollar (Chair, 2017-2019)  
Michael Evans (Secretary, 2017-2019)  
Anne de Vernal (2017-2018)  
Tim Moore (2017-2018)  
David Neelin (2017-2019)  
Dominique Weis (2017-2019)  
Larry Heaman (2017-2019)  
Bernard Boudreau (2018-2020)

**6. The Canada-Ukraine Exchange**

Lawrence Mysak informed those present about the status of the exchange program between the RSC and the National Academy of the Sciences of Ukraine (NASU). It had been dormant for a

number of years, but was re-initiated as a mechanism for supporting younger scientists and scholars from NASU to visit mentors (who are Fellows of the Society Canada) for periods of a few months. This year, two visitors had availed themselves of this opportunity: Olga Zakhzhay, an astronomer, visited York University (host: Ray Jayawardhana) in September 2017 and Dmytro Sytnyk, an applied mathematician, will be visiting WLU (host: Roderick Melnik) shortly.

#### **7. ICSU**

Those present were informed that the International Council for Science (ICSU) will merge with the International Social Science Council (ISSC) in 2018 to form the International Science Council.

#### **8. Closure of the 5 year Climate Change and Atmospheric Research program**

NSERC's Climate Change and Atmospheric Research (CCAR) program has now ended and its future is uncertain. There was no unanimous support by those present for lobbying for its continuation.

#### **9. Adjournment**

The meeting was adjourned.

Submitted by Frank Wania





2017 Annual Business Meeting  
Academy III Science: sub-meeting of life sciences division (LS)

November 25, 12pm  
Started in East Ballroom

Meeting was called to order by Michel Tremblay

Dr. Tremblay introduces himself and mentions that he is replacing Mona Nemer as the incoming chair to the nomination committee (he later learns that this also means he is now the director of the LS Division)

Michel Tremblay presented a report from the 2016 New Fellow Selection Committee for the 2017 Fellows. Presented the names of the members of the 2016 committee. Announced that 144 applications were reviewed, of which 19 were finally nominated. Also, presented the membership of the 2017 committee.

Michel did comment on aspects of conflict of interest in the actual procedure. Indeed, at the initial stage review assignments take into account these conflicts. However, then the final 30 dossiers are reviewed, this is done by the full committee without any attention to any particular conflict of interest. This is something that could be considered going forward.

Question by Ken Davey: His understanding that over 200 applications were reviewed, but that does correspond to the number reviewed. Marie-Lyne Renaud specified that in fact that in total we had 495 applications, considering the 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> year reviews. However, the number for LS was indeed 144.

Comment Ken Davey: He mentions that there is a real problem with committee composition and not enough representation from the non-medical LS community. In addition, there is not enough attention to affiliation and points out that the 2016 committee had two members from the University of Ottawa and 2 members from the University of Alberta.

Ken Davey asks to put forward a motion.

**However, the room is too loud and no one can understand the conversation. The entire meeting reconvenes into a different room.**

The group reconvened in a different room:

Comment by John Thompson: He first mentions that he is a past chair of the new member selection committee. He points out that ensuring equity is not a new problem. He mentions that one of the main challenge is the diversity of science that needs to be covered by the committee.

Question Judy Iles: Asks how the members of the nominating committee are selected. Michel and Marie-Lyne provide clarity around this question.

Question Judy Iles. At what level is the diversity of the committee reviewed both for academic and institutional diversity.

At this point, Ken Davey reads out his proposed motion:

The President and the Council of the Science Academy reviews the membership of the Committees affecting the appointment of the new Fellows in LS, including the Academy Committee for the Selection of New Fellows and to determine whether that membership is appropriate in terms of gender, language, geography, discipline, institution and generational selection.

This prompts some discussion:

Ken Davey's makes the point that the committee presently has no members that are from institutions that do not have medical faculties (such as Victoria and Simon Fraser).

Gary Slater mentions that this problem is not unique to the LS division, and this has largely been addressed by ensuring that all specialties are represented. He makes the point that this can be resolved at the division level and would not require splitting the division further.

John Small also indicates that these are not new issues, they were the same problems 20 years ago. It is possible to improve the present situation. He does point out the problem that it is often hard to get members from some universities to be part of the communities, we do not have volunteers.

John Thompson points out that one of the problems to getting volunteers is the work load due to the fact that the number of applications to review is very high.

Peter Kevan points out that the College of New scholars seems to have addressed this issue better. He noted that the new RSC journal, FACETS, has recognized this and the journal has divided the LS into a medical and non-medical section.

Sally Aitken suggests that the skew in terms of Fellow might actually happen after each of the subcommittees do their work.

Jeremy McNeil state that in the past the solution that has worked is to ensure the diversity of the committee. He suggests that there should be procedural rules that ensure this.

Graham Bell put forth the notion that there are four possible solutions

- 1) Status Quo (and the conclusion that there is no problem)
- 2) A more moderate scale solution would be to fix the procedural nature that would equilibrate the composition of the committee
- 3) Soft split: a three-way quota system between medicine, biology and other discipline
- 4) A hard split into two different divisions

He would recommend option 3 but suggest that more immediately the solution would be option 2 (thus modifying the committee for 2017).

Michel Tremblay puts forth the solution where he would be a non-reviewing member of the committee and that two more members could be added to the committee that are not from the medical sciences.

Graham asked for clarification to see if there was any enthusiasm for a quota system.

Ed McCauley made the argument against a quota system. Before supporting such a motion would want to have more information, perhaps a five-year average, to look at applications to see of any evidence of systemic bias. Made to point that within a given year the excellence of dossiers in different fields might vary and a quota system would have a hard time dealing with this.

Jeremy McNeil agreed with Ed. The advantage of a monitoring system, and transparency, might be beneficial in terms of outward perceptions.

Mark Crowther agreed that it would be helpful to have more data as we probably at this time do not have a good overview of the scope of the problem.

Michel Tremblay comments that it is clear that there is an imbalance in the present committee.

Peter Kevan pointed out that when he was a new Fellow he put his name forward to serve on a committee but he was never asked and this might be due to some systemic bias in terms of institutional affiliation.

Jeremy McNeil commented on what we ask in terms of service of new members. Do we ask them up front if they are willing to serve on committees, and if so which committees?

Marie-Lyne Renaud provides some clarity around these matters, and also mentions the operational guidelines that are being finalized and will be a living document for improvement.

At this point the meeting is running over time, and members spend the last minutes debating two motions.

For Dr. Davey's initial motion the group feels that this should not be a motion, but a strong recommendation that should be transmitted to the Academy of Science for consideration.

Graham Bell puts forward the specific motion that 2 new members, not related to the medical sciences, be immediately added to the 2017 selection committee. The motion is seconded by Ed Crowley.

Lori West asked for clarification: Is this a motion in perpetuity? Both Michel Tremblay and Graham Bell indicated that this is a specific solution for next year. They will be looking to other strategies for more long-term solutions.

A vote was taken for the Graham Bell motion. With the exception of one abstention there was a unanimous vote to accept the motion.

Minutes taken by Anne-Marie Mes-Masson  
Secretary of the LS division,

# **Report from the Chair of the Division Mathematical and Physical Sciences of Academy III (2017.10.25)**

## **1. Governance:**

For 2016-2017, the Selection Committee for the Nomination of New Fellows was composed of:

Eugene Fiume, University of Toronto, Department of Computer Science  
Bruce Gaulin, McMaster University, Department of Physics and Astronomy,  
Ian Goulden, University of Waterloo, Department of Mathematics and Statistics,  
Bruce Lennox, McGill University, Department of Chemistry,  
Ian Putnam, University of Victoria, Department Mathematics and Statistics,  
Gary Slater, University of Ottawa, Department of Physics  
Paul Van Oorschot, Carleton University, Department of Computer Science.  
Mary Anne White, Department of Chemistry, Dalhousie University

Bruce Gaulin served as Chair of the Committee and Gary Slater served as Secretary.

## **2. Selection of new fellows:**

The Division received 69 Canadian nominations and 1 Foreign nomination. The selection process was made in two steps (or two rounds) in order to reduce the workload of the members of the committee, and to permit the members with the greatest expertise to advise on the shortlist of nominations to receive further consideration. Four (4) subcommittees were formed: in Chemistry, it was composed of Lennox (chair) and White; in Physics and Astronomy, it was composed of Gaulin (chair) and Slater; in Mathematics and Statistics, it was composed of Goulden (chair) and Putnam; and, in Computer Science, it was composed of Fiume and Van Oorschot (chair).

In the first round, each subcommittee members ranked the candidates who had been assigned to him/her and provided his/her ranking to the subcommittee's chair; in a phone call, the two subcommittee members agreed on a final ranking and provided to the Division Director a short list of names (this number was different from subcommittee to subcommittee since it depends on the number of applications received in each discipline). In 2017, Chemistry provided 8 shortlist names, Physics 5, Mathematics 5 and Computer Science 5. The applicants outside of this shortlist received no further consideration in the competition. Within the subcommittees, members that had conflicts of interest ranked all the candidates, and could discuss (with discretion) the cases as long as the other member of the subcommittee was aware of the conflict; this rule was required in view of the limited number of members involved.

In the second round, the Division Chair sent the Round One shortlist names to everyone (a total of 23 shortlisted nominations were then considered). All committee members ranked the shortlist candidates and sent their scores to the Division Director. In this

round, members with a conflict of interest were not allowed to rank the corresponding nominations; this bias was corrected by considering average ranks (with standard deviation) instead of summing up the scores. There was a final conference call involving all the committee members and the discussion focused on those shortlist nominations whose scores had a large standard deviation and those close to the decision lines. A final score was then agreed upon and 12 names were provided, 8 on the A-list and 4 on the B-list. However, as indicated in the following paragraph, only 10 nominations were retained at the next-higher level within the competition.

The candidates recommended in the final (A and B) lists were (in alphabetical order):

BENGIO, Yoshua	Université de Montréal
HALL, Dennis	University of Alberta
HINSHAW, Gary	The Univ of British Columbia
JERRARD, Robert Leon	University of Toronto
LECLERC, Mario	Université Laval
LOEB, Stephen J.	University of Windsor
SACHRAJDA, Andrew	NRC of Canada
SANDERS, Barry	University of Calgary
SCHAFFER, Laurel	The Univ of British Columbia
ZUCKER, Steven	Yale University

One can note that this list of successful nominees includes one (1) women and two (2) Francophones out of ten (10) new Fellows. For comparison, last year in 2015-2016, there were three (3) women and two (2) francophones among the 11 new Fellows of that year. Four provinces are represented in the list of new MPS Fellows. The Division also received the application of a foreign candidate but declined to recommend Fellowship for this nomination.

The committee members very much appreciated the efforts of the RSC Secretariat and in particular the guidance and assistance of Mme. Marie-Lyne Renaud.

### **3. Looking Ahead:**

Going forward, the makeup of the committee will change, as it normally does, in order to relieve long-serving committee members of these responsibilities, and to bring in new committee members with fresh perspectives. In particular Cristian Genest, Gail Murphy, and Julio Navarro will be joining the committee and the subcommittees on Mathematics and Statistics, Physics and Astronomy, and Computer Science, respectively. Ian Putnam and Paul Van Oorschot will step off the committee, having honourably served the committee for a long time. Gary Slater will also step off the committee, as he will be serving as Secretary of the Academy III committee, and is no longer eligible to serve on the MPS committee as well. We thank Gary, Ian, and Paul for their service and for their pleasant company during our deliberations over the past several years.

For 2017-2018, the Selection Committee for the Nomination of New Fellows will be composed of:

Eugene Fiume, University of Toronto, Department of Computer Science  
Bruce Gaulin, McMaster University, Department of Physics and Astronomy,  
Christian Genest, McGill University, Department of Computer Science  
Ian Goulden, University of Waterloo, Department of Mathematics and Statistics,  
Bruce Lennox, McGill University, Department of Chemistry,  
Gail Murphy, University of British Columbia, Department of Computer Science  
Julio Navarro, University of Victoria, Department of Astronomy  
Mary Anne White, Department of Chemistry, Dalhousie University

With Bruce Gaulin continuing to serve as Chair of the Committee.

Sincerely yours;

A handwritten signature in black ink, appearing to read "Bruce Gaulin". The signature is fluid and cursive, with a long horizontal stroke at the end.

FRSC

Distinguished University Professor and Brockhouse Chair in the Physics of Materials  
Director, Brockhouse Institute for Materials Research





**RSC**  
The Royal Society of Canada  
The Academies of Arts,  
Humanities and Sciences  
of Canada



**SRC**  
La Société royale du Canada  
Les Académies des arts,  
des lettres et des sciences  
du Canada

## **ACADEMY OPERATIONS MANUAL**

### **PURPOSE OF THE OPERATIONS MANUAL**

The Academy Operations Manual describes routine actions required of those holding positions on the Council, Division and Standing Committees of the Academy throughout the year.

### **PREAMBLE**

The Royal Society of Canada (RSC) is a Fellowship of scholars that has the objective of promoting learning and intellectual accomplishments of exceptional quality. The Society recognizes remarkable contributions in the arts, humanities and sciences, as well as in Canadian public life.

To accomplish its objectives, the [By-Laws](#) of the RSC provide for Officers and Governing Bodies. Together, the processes for electing Fellows, Academy Officers and Members of Standing Committees require a significant degree of planning and organization. This Operations Manual is meant to provide Officers of the Academy and its Divisions with a detailed accounting of their roles and responsibilities.

### **ORGANIZATION OF THE RSC**

#### **ORGANIZATION OF THE RSC**

The Fellowship of the Society comprises distinguished persons from all branches of learning. The Fellowship (currently over **2200**) comprises Honorary Fellows, Fellows, Specially Elected Fellows, Foreign Fellows and College members, all of whom are elected by the Fellowship as well as **56** current Institutional Members that are public or private institutions or corporations.

#### **RSC COUNCIL**

The Council of the RSC is the primary policy-making body of the organization.

#### **COMPOSITION OF THE RSC COUNCIL**

The Members of the Council are: Officers of the RSC, Secretaries of the Academies, and of the College, two (2) other Officers of the Academy of Science, the Honorary Editor, the Foreign Secretary, the Expert Panels Secretary, the Chairs of Standing Committees, except for those chaired by the Past President, and three (3) representatives of the Institutional Members chosen by the Executive Committee.

## **ORGANIZATION AND COMPOSITION OF THE ACADEMIES**

The three Academies are comprised of nine Divisions:

Academy of Arts and Humanities:

1. Humanities Division
2. Lettres et sciences humaines Division
3. Arts Division

Academy of Social Sciences:

4. English Division (Social Sciences)
5. French Division (Sciences sociales)

Academy of Sciences:

6. ASE (Applied Sciences and Engineering Division)
7. EOAS (Earth, Ocean and Atmospheric Sciences Division)
8. LS (Life Sciences Division)
9. MPS (Mathematical and Physical Sciences Division)

## **RSC SECRETARIAT**

In order to assist the Academy, the RSC Secretariat provides assistance with a number of tasks, including those detailed below:

- receiving, recording and distributing nomination files
- maintaining lists of ongoing nominations
- compiling and distributing statistical information with regards to nominations
- preparing the ballots for the candidates to Fellowship
- counting ballots to verify election
- ensuring institutions and primary nominators are notified of award recipients and the election of a Fellow and that award recipients and new Fellows receive all necessary information pertinent to their election
- issuing a press release to announce the elections
- database searches to assist with the selection of new committee members based on division, expertise, etc.
- recording and notification of deceased Fellows as well as securing an author to prepare a biographical notice for publication
- booking of meetings and conference calls for RSC business
- maintaining the records of the Academy
- responding to general inquiries and routine requests with Fellows or others seeking information about the Division/Academy

## **ORGANIZATION OF THE ACADEMIES**

### **ACADEMY COUNCIL**

While the primary operations of the Academy are organized at an Academy-wide level, many of the activities and functions of the Academy are carried out at the Divisional level.

The overall direction of each Academy is managed by the Academy Council, its Officers, as assisted by its standing committees.

#### Composition

The Council of each Academy consists of the Academy President, the Academy President Elect or the Past President, the Academy Secretary, the Division Directors, the Division Secretaries and one member at large for each Division.

#### Nomination

The Academy President is elected by the Fellows of the RSC through a ballot process and the other members of the Academy Council are appointed by the Academy Committee for the Nomination of Officers (ACNO).

#### Duration of the Mandate

The President will be on the Academy Council for four years (one year as President-Elect, two years as President and one year as Past President). The other members of the Academy Council will serve for a two-year term, renewable once. The incoming President will assume the new role at the Annual Business Meeting of the Society.

#### Responsibilities of the Academy Council:

- Managing the affairs of the Academy
- Appointing an Academy Editor
- Establishing an Academy Executive Committee (if necessary)

### **ACADEMY ANNUAL BUSINESS MEETING (AABM)**

An AABM shall be held preceding the Annual Business Meeting of the Society and shall be preceded by an ABM of each Division.

Only Fellows of the Academy or Division may vote at the meetings.

The Agenda for the Academy and Division ABMs shall be circulated to relevant Fellows one week prior to the AABM. A typical agenda for the Academy ABM can be found in **Appendix I**.

The main purposes of the AABM's are:

- to review the activities of the year, as reported by the Academy President and the Division Directors and vote on matters arising from these reports, as necessary;
- to ratify the nomination of candidates who are proposed by the Academy Committee for the Nomination of Officers (ACNO) by acclamation;
- to consider and vote on matters affecting the Society as a whole, the Academy or the Division, as the case may be; and

- to consider other matters brought forth by Fellows or Divisions, either on their own initiative or on behalf of others.

Minutes of the Academy AABM shall be kept by the Academy Secretary (or designate) and a copy of the minutes shall be forwarded to the RSC Secretariat.

#### **ACADEMY AND DIVISION BUDGETS**

The Honorary Treasurer and other members of the RSC Council of the RSC, including the President of the Academy, decide the annual allotment of funds to the Academy. The President and Executive of the Academy will prepare an Academy budget which, to the extent possible, will allocate funds for travel and expenses associated with meetings of the Academy Executive and Council, meetings of Academy and Division committees, regional meetings of the Academy and specific activities and projects of the Academy, as approved by the Academy Council. The Academy budget must be submitted to the RSC Secretariat in February to be included in the overall budget presented to the Finance Committee for the initial review. Once the Finance Committee has reviewed the budget it will be submitted to the RSC Council for approval. The RSC Fiscal year is from July 1 to June 30.

#### **ACADEMY OFFICERS & OTHER POSITIONS**

##### **ACADEMY PRESIDENT**

###### Duration of the mandate

The President will serve for four years as follows: one year as president-Elect, two years as President and one year as Past-President.

###### Responsibilities

As titular head of the Academy, the incumbent represents the Academy within the Society and to the public at large. The President has responsibilities with the Academy, and ex officio as an Officer of the RSC.

As President of an Academy, the President:

- Is a member of the RSC Council
- Is Chair of the Academy Council
- is Chair of the Academy Committee for the Selection of New Fellows
- is Chair of the Academy Committee for the Nomination of Officers (ACNO) (during past President term)
- is Chair of Medal and Awards Committee of the Academy (during past President term)
- is a member of the RSC awards and Recognition Committee (during Present and Past President term)
- is a member of the Academy Council (during full mandate: President Elect, President and Past President terms)
- Presides at all Business and Academy Council meetings of the Academy and at such other meetings as the Academy Council may determine
- calls meetings of the Academy Council at predetermined times or as necessary, reviews and reports on the business of the Academy at Society and Academy meetings and regularly checks that actions are being taken in accord with routine or specific requirements

- greets new Fellows and in-coming Officers of the Academy; acknowledges the contributions of retiring Officers and others who have contributed to the work of the Academy
- receives, acts on or delegates to other Officers of the Academy responses to proposals, requests and questions from Fellows or those outside the Society in matters affecting the Academy
- as agreed by the Academy Council, takes initiatives on behalf of the Academy. Academy initiatives include leading or participating in national or regional meetings of the Society or the Academy, stimulating contacts with other learned organizations in Canada and internationally, and organizing or participating in meetings or activities such as symposia, research projects, policy and public awareness, in coordination with appropriate committees or organizations of the Academy, Society or other bodies
- assists the RSC Secretariat in responding to questions or proposals from Fellows or the general public
- takes part in all standard activities and ceremonies of the Society
- ensures that the regular business of the Academy within the Society takes place in a timely fashion and that all actions and projects for which the Academy has prime responsibility are carried out
- reports on these activities to the membership of the Academy and the Society by communications to the Academy and Society Councils, at the ABM, and through newsletters and other channels as determined
- ensures that the obituaries of deceased Fellows of the Academy are prepared;
- prepares records of Academy activities and obituaries for publication in the Proceedings of the Society or as otherwise determined by the Society Council
- supervises, directly or by delegation, the use of funds, staff and resources designated for particular actions or projects for which the Academy has prime responsibility

#### Election of the President

The procedure for nominating and electing the Academy President is under the supervision of the Academy Committee for the Nomination of Officers (ACNO).

## **ACADEMY SECRETARY**

### Responsibilities

The Secretary has responsibilities with the Academy, and ex officio as an Officer of the RSC.

- is a member of the Council of the Society
- is a member of the Society Awards Committee
- in the absence of the President, is a member of the Executive Committee of the Society
- is a member of the Academy Council
- is responsible for taking minutes at meetings of the Academy
- is responsible for forwarding a copy of the Minutes of Meetings to the RSC Secretariat
- when required, assists the RSC Secretariat in responding to questions or proposals from Fellows or the general public
- cooperates as necessary with the Honorary Secretary of the Society concerning the Academy
- reviewing and, as necessary, amending the Operating Manual of the Academy, annually or as required
- establishing contacts with the Division Nominating Committees to ensure that all committees are at full complement
- informing the Academy Council and all candidates for Academy or Division positions of the results of elections and appointments, and sending each a copy of the Operating Manual of the Academy
- ensuring that all positions requiring representatives within the Academy are filled in time for the respective AABMs
- performing such other duties as the Academy Council may decide
- ensuring that the regular business of the Divisions is ongoing. (For example, an annual call to Division Nominating Committee chairs to “prompt” them to undertake their work for the year ahead)

### Nomination

The Secretary is nominated by the Academy Committee for the Nomination of Officers.

### Duration of Mandate

The secretary term is for two years, renewable once.

## **ACADEMY EDITOR**

### Responsibilities

- provide content for the Academy bulletin (typically published in April, August and December)

### Nomination

The Academy Editor is appointed by the Academy Council.

### Duration of Mandate

The term is for two years, renewable once.



## **ACADEMY COMMITTEES**

### **Academy Committee for the Nomination of Officers (ACNO)**

#### Composition

The Academy Committee for the Nomination of Officers is composed of two representatives from each Division of the Academy plus the Past-President of the Academy as Chair. It is preferable to have committee members with some experience on Academy or Society Committees.

#### Responsibilities

- nominate candidates for vacant positions in the Academy
- appoints members for the Division Nominating Committees (DNC)

#### Duration of Mandate

The term of the members of the ACNO is for two years, renewable once.

#### Procedures

The Academy Committee for the Nomination of Officers, in conjunction with the RSC Secretariat, shall supervise the process for the election of the President-Elect by Academy Fellows. They shall nominate persons for the position of Academy Secretary.

### **Academy Committee for the Selection of New Fellows (ACSNF)**

#### Composition

The Academy Committee for the Selection of New Fellows consists of the Officers of the Academy and an official from each Division. This official will be either the Director or the Secretary of the Division.

#### Responsibilities

- review annually the recommendations of the Division Committees for the Selection of New Fellows and all nominations of candidates for Foreign Fellow of the Academy.
- recommends to the RSC Council candidates for the number of positions allotted to the Academy for New Fellows and Foreign Fellows.

#### Procedures

The RSC Secretariat will provide committee members with the required documents being put forth by each Division Committee for the Selection of New Fellows (usually in March of each year). The Secretariat will also provide any information committee members will need with regards to the procedures to be followed. Committee members will meet by teleconference (late March or early April) to discuss the nominations and determine which will be recommended for inclusion on the ballot for election.



## Academy Awards Committee

The RSC awards several medals, some annually and some bi-annually. They are distributed as follows:

### Academy of the Arts and Humanities:

- Pierre Chauveau Medal (bi-annual)
- Lorne Pierce Medal (bi-annual)
- J.B. Tyrell Historical Medal (bi-annual)

### Academy of Social Sciences

- Ursula M. Franklin Award (Award in Gender Studies) (annual)
- Innis-Gérin Medal (bi-annual)

### Academy of Science

- Bancroft Award (bi-annual)
- Flavelle Medal (bi-annual)
- Henry Marshall Tory Medal (bi-annual)
- John L. Synge Award (bi-annual)
- McLaughlin Medal (annual)
- Mirosław Romanowski Medal (annual)
- Willet G. Miller Medal (bi-annual)

### Composition of the Academy Awards Committees

The Academy Award Committees are chaired by either the Academy Past-President or the Academy President-Elect and include the Academy Secretary and the Division Directors, or their designates.

## **ORGANIZATION OF THE DIVISIONS**

### **DIVISION DIRECTORS**

#### Responsibilities

As titular head of the Division and a member of the Academy Executive, the Director represents the Division within the Academy and the Society, and to the public at large. The Division Director has responsibilities with the Division, and ex officio as a member of the Executive Committee of the Academy.

As Director, the Division Director has the following responsibilities to the Division:

- to be Chair of the Division Committee for the Selection of New Fellows
- to be Chair of the Annual Business Meeting of the Division (held at the Annual Business Meeting of the Academy)
- to ensure prior to the AGM that all committees of the division have the requisite number of members
- to ensure that committees rotate in such a manner so as to ensure continuity and institutional memory that all positions for which the Division is responsible are filled
- to issue prior to the AGM an annual report of the Division to the President of the Academy

- to ensure that the DCSNF Committee list is ratified at the Annual Business meeting
- to ensure that the Member-at-large position from the Division to sit on the Academy Council is ratified

As an ex officio member of the Academy Council, the Division Director has the following responsibilities:

- is a member of certain Awards Committees related to the Academy;
- when required, assists the RSC Secretariat in responding to questions or proposals from Fellows or the general public

#### Nomination and Appointment

The Director of the Division shall be proposed for appointment by the Division Nominating Committee. The appointment of the Director shall be ratified by the Fellows of the Division at the Annual Business Meeting of the Division.

#### Duration of Mandate

The term of the Division Director role is for two years renewable once.

### **DIVISION SECRETARY**

#### Responsibilities

- to act as the Assistant Director of the Division if requested by the Director
- to keep the minutes of meetings
- to serve as a member of the Division Committee for the Selection of New Fellows
- to compile the rankings of each member of the DCSNF Committee and submits them to the members prior to the teleconference
- to keep a record of the meetings of the DCSNF Committee (date of the teleconference, list of participants, number of dossiers reviewed by the committee, number of files to be accepted by the Academy, alphabetical listing of the received nominations, and comments/suggestions on the overall selection process)
- to serve as a member of the Executive Committee of the Academy
- to attend meetings in replacement of the Director of the Division
- to liaise as necessary with the Academy Secretary

#### Nomination and Appointment

The Secretary of the Division shall be proposed for appointment by the Division Nominating Committee. The appointment of the Secretary shall be ratified by the Fellows of the Division at the Annual Business Meeting of the Division.

#### Duration of Mandate

The term of the Division Secretary is for two years, renewable once

## **DIVISION MEMBER-AT-LARGE**

### Responsibilities

- is a member of the Academy Council and shall perform such other tasks as are assigned by the Academy Council

### Nomination and Appointment

The Division Member-At-Large shall be appointed by the Division Nominating Committee.

### Duration of Mandate

The term of the Division Member-At-Large is for two years, renewable once

## **DIVISION COMMITTEES**

There are two Standing Committees for each Division:

- Division Nominating Committee (DNC)
- Division Committee for the Selection of New Fellows (DCSNF)

## **Division Nominating Committee (DNC)**

### Composition

The Division Nominating Committee is composed of five members of the Division. The members of the Committee choose their Chair.

### Appointment

The Council of each Academy appoints the members of this committee.

### Duration of Mandate

The terms are for a two years period renewable once.

### Responsibilities

- is responsible for ensuring that the committees remain at full compliment
- proposes candidates for Division Director
- proposes candidates for Division Secretary
- appoints candidates for vacant positions in the Divisional Committee for the Selection of New Fellows
- appoints the Member-at-Large of the Division

### Procedures

It is the responsibility of the Division Director and the Chair of the Divisional Nominating Committee to ensure balance in terms of gender, language, geography, discipline, institution, and generational affiliation. The Division Director and the Chair of the Divisional Nominating Committee will also supervise the rotation of committee members such that, exceptionally, a committee member is offered three years instead of two.

## **Division Committees for the Selection of New Fellows (DCSNF)**

### Composition

The DCSNF is composed of the Division Director as Chair, the Division Secretary and five to seven Fellows chosen to be broadly representative of the Division disciplines, as well as ensuring balance in terms of gender, language, geography, discipline, institution, and generational affiliation

### Appointment

The Division Nominating Committee appoints the members for this committee.

### Responsibilities

The DCSNF annually reviews the nominations of new Fellows to its Division and recommends to the Academy Committee for the Selection of New Fellows candidates for election to the Society according to the number of positions available for each Division.

### Duration of Mandate

The term is of two years, renewable once. Exceptions can be made to ensure that not all terms expire at the same time.

### Procedures

- review and rank the nomination dossiers submitted to the Division
- rankings are submitted to the Chair of the Committee
- the Chair of the Committee with the help of the Division Secretary compiles the results
- the results are sent to the committee members prior to the teleconference
- the RSC Secretariat organizes the teleconference
- the members agree to a list of candidates that will be put forth to the Academy Committee for the Selection of New Fellows (ACSNF) as the most suitable for election
- the Secretary of the Committee writes a report that will be submitted to the Secretariat (names of the suggested candidates and comments/suggestions to the ACSNF on nominations for Foreign Fellowship)

The Committee will bear in mind the guidance it receives from the Academy Council with particular respect to desired changes in the number of Fellows from specified fields of expertise and the distribution in the Fellowship to ensure balance in terms of gender, language, geography, discipline, institution, and generational affiliation location and such other criteria as the Council may determine.

## APPENDIX I

### APPENDIX I: SAMPLE AGENDA

#### ANNUAL BUSINESS MEETING OF THE ACADEMY OF SCIENCE

1. Introduction [President]
2. Minutes of the last meeting [President]
3. Business arising from the minutes [President]
4. Report of the President
5. Report of the Academy Secretary
6. Reports of the Division Directors
8. Academy initiatives
  - a. Bulletin
  - b. Expert panels
  - c. Medals and Awards
  - d. Regional events
9. Other business
10. Adjournment



# Past Presidents' Council – Conseil des Anciens

## Présidents

### Academy of Science, Royal Society of Canada

**Mandate:** Use the valuable leadership experience, wealth of knowledge and wisdom of Past Presidents of the Academy of Science to assist the current President in fulfilling the Academy's objectives and providing continuity and creativity in its development.

**Intention:** The PPC is designed to directly support the President and provide contributions that are complementary to or completely outside of the mandates of existing committees. The PPC is meant to add consistency and innovation to the growth of the Academy and furnish vision to the Academy for reaching its full potential.

**Membership:** All Past Presidents who accept an invitation to become *Distinguished Member* of the Past Presidents' Council (PPC).

**Structure:** The Distinguished Members shall elect a *Chair* of the PPC who shall serve for a three year period.

The Chair shall appoint a *Secretary* for a three year term to record the minutes of meetings and the activities of Distinguished Members.

The President may directly contact one or more Distinguished Members for assistance in addressing a particular problem and will inform the Chair whenever this is done.

**Duties:** The PPC shall provide important contributions to the ongoing development of the Academy of Science. Some of the tasks will be directly requested by the President while others will be initiated by individual Distinguished Members, according to the following three goals having activities which include:

#### ***Promote - Promouvoir***

Represent the President on special occasions when requested to do so.

Elevate the profile of the Academy at the local, provincial, national and international levels.

Organise special conferences, meetings and workshops.

Raise funds for specific educational and research projects.

Obtain financial support for important projects within and across the four Academy Divisions as well as in cooperation with other Academies for interdisciplinary initiatives.

Write timely articles for the Academy Newsletter and encourage others to follow suit.

Author newspaper articles about activities of Canadian scientists and how their work benefits society.

#### ***Recognise- Reconnaître***

Proactively nominate deserving scientists to become Fellows of the Royal Society of Canada and encourage others to do likewise.

Actively assist in nominating qualified scientists who are under-represented in the Academy, such as females and Francophones, to be elected Fellows.

Put forward academics who are starting their careers to be elected Members of the College of New Scholars, Artists and Scientists.

Ensure deserving candidates are nominated to receive medals falling under the purview of the Academy.

Suggest new medals and associated funding sources for the four Divisions within the Academy, especially in emerging areas of high importance.

***Advise - Conseiller***

Furnish advice to the President when asked to do so for specific situations.

Serve as an ongoing source of information and guidance to the President of the Academy.

Participate in forming Expert Panels and raising funds for them.

Provide names of experts to serve on and chair Expert Panels, including Distinguished Members of PPC.

Initiate and assist in funding and launching new initiatives for advising government, non-governmental organizations (NGOs) and the Canadian public on matters of societal importance.

**Meetings:** A separate meeting of the PPC shall take place at each Annual General Meeting (AGM) of the Academy which is usually held in late November. The meeting will be jointly chaired by the President of the Academy and the PPC Chair. When necessary, other meetings can also be arranged as teleconferences or face-to-face meetings.

**Budget:** When required, the current President shall transfer funding to a Distinguished Member or group of Distinguished Members of the PPC in order to accomplish a specific activity needing monetary backing. For example, a Distinguished Member may require financial support to participate in an international meeting on behalf of the President at which the Academy of Science needs to be represented. A small budget should be made available to provide funding for a meeting place and refreshments for the annual meeting of the PPC mentioned above as well as special meetings called by the President or the PPC Chair.

**Review:** Every five years, the current President of the Academy of Science in consultation with the Members of the Executive Committee will review the performance of the PPC in order to determine how the mandate and structure of the PPC can be enhanced.

(Revised version respectfully written by the Academy President, Jamal Deen, and the Past President, Keith Hipel, on 7 November 2016.)

**Unanimously Approved at Academy of Science Annual General Meeting, Saturday, November 19, 2016 (Four Points Kingston, Salle Limestone C Room)**

**RSC Academy of Science Past Presidents Council**

**Chair:** Lawrence A Mysak, lawrence.mysak@mcgill.ca

**Secretary:** Marie D'Iorio, mdiorio@uottawa.ca

**"Visual Archivist":** Keith Hipel, kwhipel@uwaterloo.ca