Submissions

Submissions and ideas for publication are appreciated. They should be sent to the editor:

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CAIMS•SCMAI 2016 Announcement
President’s Report

by Ray Spiteri, CAIMS • SCMAI President

The Canadian Applied and Industrial Mathematics Society (CAIMS) * Societe Canadienne de Mathematique Appliquee et Industrielle (SCMAI) is Canada’s national organization dedicated to the promotion of applied mathematics and computational science for solving real-world problems. Since its inception in 1979, CAIMS has worked towards increasing public awareness and support for applied and industrial mathematics both nationally and internationally through education and scholarship. More information about CAIMS can be found at http://www.caims.ca.

In June 2015, I had the privilege of becoming the 17th president of our society at our annual meeting at Wilfrid Laurier University in Waterloo. I have been a CAIMS member for almost 20 years now, and I am still amazed at the high level of collegiality and support that we, a relatively small band of applied and industrial mathematicians who also have ties with Canada, provide ourselves, our colleagues, our country, and our discipline. It really is a special atmosphere, not one that you encounter everywhere, and when asked whether I belong to CAIMS, I am honoured to reply "Hell, yes!"

I owe a large thank you to my predecessor Ian Frigaard of UBC for sharing his boundless energy and exceptional organizational skills while President. He is the latest in the series of giants upon whose shoulders we all stand to lead our society forward. Ian moves to the role of Past-President, vacated by Jianhong Wu of York University. We sincerely thank Jianhong for his six years of being a CAIMS President in one flavour or another. This year, we welcome Matt Davison of Western University as our new President-Elect. Matt has extensive experience on Boards and other leadership entities from the department level to the university level to the national level in Canada. The CAIMS Executive is excited to have Matt on the team!

We also have a new Secretary this year, Justin Wan from the University of Waterloo. We have already seen signs of Justin’s superlative organizational skills in this role. It is however also with bittersweet emotion that we bid a fond farewell to Sharene Bungay from Memorial University as she steps down after four years as Secretary (following on from a two-year stint as member-at-large). Sharene has been one of the few constants in my time on the Board. It is hard for me to imagine a CAIMS Board without her. We will miss her sense of humour, practical nature, and that ever-so-slight Newfie accent. All the best on your next adventure, Sharene!

Last but not least, we are pleased to welcome Troy Day as our newest member-at-large on the CAIMS Board. Troy came out on top of a fairly heated election process, so he comes with a lot of recognition for his talents. Roderick Melnik
stepped down this year as member at large, and we thank him for his service.

There will be elections for the positions of Treasurer and Communications Officer in 2016. Lucy Campbell and Luciano Buono have respectively agreed to run as incumbents. We also have three positions opening up for members-at-large in 2016. All CAIMS elections are now for three-year terms. I urge everyone to think about taking a more active role in CAIMS and encouraging your colleagues to do so as well! We hope to have electronic voting available in time for the 2016 election season. Stay tuned!

By way of update, CAIMS is now legally incorporated as a not-for-profit corporation as defined by Corporations Canada. We will be using a filing service to keep up with the reporting associated with this status. We have also paid what we think we owe in terms of back taxes to Revenue Canada. We are now waiting for the Notice of Assessment to see if further action is required. We sincerely thank Lucy Campbell for her incredible work to guide CAIMS through this maze of bureaucracy.

Members of the CAIMS Executive now have their own e-mail addresses: president@caims.ca, secretary@caims.ca, treasurer@caims.ca, communications-officer@caims.ca, president-elect@caims.ca, and past-president@caims.ca. This is to allow us to send official CAIMS e-mail with our CAIMS hats on as well as to have a record of the society’s correspondence. We are even working on getting business cards!

The CAIMS Executive is undertaking a number of initiatives for 2016, many of them centred around communications and social media.

We plan to create an operational manual describing the duties of the positions on the CAIMS Executive. This will not only help us keep track of the evolving roles of the various positions, but it will also help with future recruiting and provide as a record of responsibilities for those who have served.

We have also been working toward having closer ties with our sister societies SIAM and the CMS. We already have reciprocal membership agreements in place with both societies. We are working to promote joint memberships as well as participation in each other’s annual meetings, perhaps by means of embedded sessions.

As you may have already heard, we have a Facebook page (Like us and invite your friends!), a Twitter handle (@CAIMS*SCMAI), and a CAIMS-SCMAI youtube channel (on which we have posted our first MathBio Annual Distinguished Lecture). Please subscribe to all of them so we can stay in touch on all the CAIMS happenings!

Last but not least on the communications front, we are continually working on the CAIMS website to keep it relevant to the interests of the society and its members. Please send us your comments and suggestions for improvement any time!
The CAIMS Annual Meeting this year was held in conjunction with the AMMCS conference series and the 23rd Conference of the CFD Society of Canada from June 7-12, 2015 at Wilfrid Laurier University in Waterloo, Ontario. I would like to extend a special thank you to the local organizing committee at Wilfrid Laurier led Roderick Melnik, Roman Makarov, Zilin Wang, and Herb Kunze. The themes of the meeting were Applied Analysis and Dynamical Systems, Industrial Mathematics, Mathematical Biology, and the second instantiation of the Canadian Symposium in Numerical Analysis and Scientific Computing. I was personally impressed with the quality and diversity of the scientific program and plenary speakers of the conference.

One of the highlights of the meeting is the awarding of the Society’s prizes recognizing various contributions of Canadian applied and industrial mathematics. The awards are usually made at the conference banquet, which this year featured a performance from a teenage string quartet from Chile and a celebration of our national pastime (ice hockey) complete with a foot-stomping tune from the incoming President and fisticuffs from the outgoing and past Presidents.

The 2016 Meeting will be held in conjunction with the Canadian Symposium on Fluid Dynamics from June 26-30 at the University of Alberta in Edmonton, the City of Champions. The scientific themes are Applied Analysis and Dynamical Systems, Mathematical Biology, Financial Mathematics, Scientific and High-Performance Computing, and the Mathematics of the Oil Industry. The local organizers are Peter Minev, Thomas Hillen, Rouslan Krechetnikov, and Morris Flynn. I look forward to a successful meeting and hope for continued enthusiastic support for applied and industrial mathematics in Canada.

Be active in your society by joining us in Edmonton in June!

Raymond Spiteri,
President CAIMS*SCMAI
Board of Directors

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Minutes of the CAIMS • SCMAI Annual General Meeting  
Tuesday, June 9, 2015  Bricker Academic Building (Room BA101)  
Wilfrid Laurier University, Waterloo

1. CAIMS • SCMAI President Ian Frigaard called the meeting to order at 12:11pm.

2. Quorum was established.

3. The meeting was constituted.

4. Approval of the Minutes of the AGM of June 24, 2014:
   The minutes were circulated electronically to members with the Notice of Meeting on May 19th, 2015 (Schedule A) and are also available in the Fall newsletter posted on the CAIMS • SCMAI website.
   Motion (Lucy Campbell/Victor Leblanc): Approve the Minutes of the Annual General Meeting of June 24, 2014. (1 abstention) Carried.

5. Business Arising From the Minutes:
   None.

6. Continuance under the Canada Not-for-profit Corporations Act:
   Ian Frigaard reported that continuation was approved at a special meeting of the Board of Directors on April 29th, 2015.
   Motion (Lucy Campbell/Pietro-Luciano Buono): Approve continuance of the Society under the Canada Not-for-profit Corporations Act. Carried.

7. Articles of Continuance under the Canada Not-for-profit Corporations Act:
   The Articles of Continuance are a part of our application to government indicating that we wish to continue as a society and transition to the new rules. These were circulated to members electronically on May 19th, 2015 (Schedule B)
   Ian Frigaard reported that the articles of continuance were approved at a special meeting of the Board of Directors on April 29th, 2015.
   Ian clarified that there are no substantial changes for members in terms of how CAIMS works.
   Motion (Lucy Campbell/Brian Wetton): Approve the Articles of Continuance under the Canada Not-for-profit Corporations Act (subject to revisions required by Corporations Canada). Carried.

8. Repeal of current by-laws of the Corporation
   In order to comply with and transition to the new Canada Not-for-profit Corporations Act new by-laws have been drafted. Approval of these new by-laws first
requires that we first repeal the current by-laws. The Corporation would operate under these by-laws until continuation under the new by-laws.

Motion (Lucy Campbell/Gordon Swaters): Repeal the current by-laws of the Corporation effective on the date that the Corporation continues under new by-laws. (1 abstention)
Carried.

9. **Change of mailing address of the Corporation**

CAIMS•SCMAI requires a permanent address for communication with Corporations Canada and the CRA. Currently we use the Treasurer’s address and have to change it frequently. The CMS office has agreed to serve as a permanent address for CAIMS•SCMAI and to forward mail to the CAIMS•SCMAI Treasurer. CAIMS•SCMAI will continue to use the current Treasurer’s address for membership forms.

Motion (Lucy Campbell/Ray Spiteri): Change the mailing address of the Corporation to the address of the CMS Head Office:
Canadian Applied and Industrial Mathematics Society
C/O Canadian Mathematical Society
209 - 1725 St. Laurent Blvd.
Ottawa, ON Â K1G 3V4
Canada. (1 abstention) Carried.

10. **Enactment of General Operating By-law No. 2, under the Canada Not-for-profit Corporations Act**

Currently, we are operating under By-law No. 1, which will be repealed when we continue under CNCA. General operating By-law No. 2 was circulated to the membership on May 19th, 2015 by the Secretary, Sharene Bungay (Included as schedule C of the notices of this meeting).

Summary of the key changes:

- Officers and Directors must be appointed with a members’ vote ratified at the AGM.
- Transition of Presidents (elect, current, past) must be ratified with a members’ vote at the AGM.
- Terms of Secretary, Treasurer and Communications Officer to be changed from 2 years to 3 years after the current terms end.

(See E-News Volume 15, Number 7 for details)

It was confirmed that a quorum is required for election ratification at 5% of the membership.

Ian Frigaard reported that the General operating By-law No. 2 was approved at a special meeting of the Board of Directors on April 29th, 2015.
Motion (Lucy Campbell/John Stockie): Confirm enactment of General Operating By-law No. 2, under the Canada Not-for-profit Corporations Act. Carried.

11. Annual report of:

(a) President

2014/15 has been a busy year after the excellent meeting in Saskatoon last year. We again thank Ray Spiteri and his team at University of Saskatchewan. The CAIMS•SCMAI board has been working hard on membership, supporting applied mathematics activities and on improving organisational infrastructure. In particular, this year we have been consumed and distracted by complying with the new federal regulations governing non-profit organizations and other matters related to tax reporting. This has fallen heavily onto the shoulders of the Treasurer, Lucy Campbell, who has immersed herself in the legal & financial intricacies with considerable energy. The upshot of this is that we need to vote in a new set of by-laws for CAIMS•SCMAI at this AGM and at the same time apply to the federal government to renew our status under their new legislation. At the same time, our financial and taxation status has changed slightly due to making some unforeseen profits in previous years. We are therefore taking the opportunity to put these aspects of the society in order. We have been very lucky to have Lucy on the board to deal with all this, consulting with legal & financial advisers as well as with our sister societies who have gone through similar bureaucratic niceties in recent years.

Sadly this year Sharene Bungay will stand down as Secretary having served CAIMS•SCMAI for 2 consecutive terms, been a previous board member at large and major contributor to organization of the meeting we held in St. John’s in Summer of 2010. As secretary Sharene has managed many aspects of our meetings, website transition, elections, e-news, etc. Overall she has given outstanding service to CAIMS•SCMAI for the past 5+ years. I would like to thank her personally and on behalf of the society for her work and wish her some quieter times ahead. Justin Wan (Waterloo) takes over as secretary this Summer. I welcome Justin to the board and am looking forward to working together.

Last year we elected Luciano Buono as our new Communications officer. He has been involved with different aspects of the society as the terms of reference of this position have evolved. He is working on energizing the activity groups (more volunteers needed please), will manage the website, has introduced a CAIMS•SCMAI Facebook group (for those younger than me!) and has pushed forward with the French translation of the website (beta version at present).

The membership and liaison committees have been chaired by Ron Haynes.
Reports from the Society

This has been a frustrating but busy year. Last year we started porting our membership database from a museum relic in Waterloo to a more modern host and structure. Unfortunately at some point the database was infected by a virus which has prevented ready access and use. With Dhavide Aruliah’s help these issues are being slowly resolved but this has had a significant impact on membership issues, such as running elections, e-mail lists etc. Hopefully these will be cured later in the Summer.

Speaking of elections, this year we welcome 3 new board members: Troy Day (Queens) as Member-at-Large, Justin Wan (Waterloo) as Secretary, and Matt Davison (Western) as President-Elect. This was a hotly contested election and I would like to thank those others who stood unsuccessfully for election – better luck next time. Roderick Melnik will stand down as member at large. We thank him for his service and in particular his energy in organizing this year’s massive joint meeting at WLU. Finally, we see the departure of Jianhong Wu from the board as Past-President, ending a 6 year term on the executive. I have greatly appreciated Jianhong’s helpful attitude and his guidance on CAIMS•SCMAI matters over the past 4 years when I have been involved. I thank him for his leadership.

This year CAIMS•SCMAI selected 4 prizewinners as follows:

- Cecil Graham Doctoral Dissertation Award: Diego Ayala of McMaster University
- CAIMS-PIMS Early Career Award: Jane Heffernan of York University
- CAIMS-Fields Industrial Mathematics Award: Sean Bohun of UOIT
- CAIMS Research Prize: Thomas Hillen of the University of Alberta

These prizes will be awarded at this meeting, at the Thursday Banquet (except for the Research Prize). I would like to thank the selection committee chairs, members of the committees and CAIMS•SCMAI members who put their energy into nominating colleagues. Equally, I thank our co-sponsors of Early Career Award (PIMS) and the Industrial Mathematics Award (Fields).

This is my last report as President of CAIMS•SCMAI. This has been an enjoyable period professionally in which I have constantly been impressed by the collegiality of those in the Canadian applied mathematics community and their willingness to work together. Ray Spiteri takes over as President. We have all seen at last year’s conference that he makes an excellent pirate captain and I am sure he will give effective (and entertaining!) leadership over the next 2 years. I know that I leave things in good hands.

Motion (Victor Leblanc/Ray Spiteri): Accept the President’s report. Carried.

(b) Treasurer:
Lucy Campbell presented the following report as CAIMS•SCMAI Treasurer.
In June 2014 I took over from Dhavide Aruliah (UOIT) as Treasurer. On behalf of CAIMS, I would like to express my sincere thanks to Dhavide for his 4 years of service to CAIMS. During his tenure as Treasurer, he was instrumental in setting up the new CAIMS website, database and online registration system and carried out numerous other duties in addition to those normally included within the mandate of the Treasurer.

Since taking office, I have worked on the following items:

i. CAIMS Incorporation with Corporations Canada: preparing new By-Laws and Articles of Continuance with lawyer Kimberley Cunnington-Taylor. The resolution for the continuance of CAIMS as a not-for-profit corporation was passed by the Board of Directors on April 29. The documentation will be submitted to Corporations Canada as soon as the required resolutions have been passed by the members.

ii. Voluntary Disclosure of the past 5 years of finances of CAIMS to the Canada Revenue Agency prepared by accountant Nicholas Ralph. The initial disclosure letter was submitted to the CRA on May 22. It is hoped that the voluntary disclosure will allow CAIMS to avoid paying penalties for having not filed tax returns in the past. It is likely however that CAIMS will have to pay HST on revenue generated from past events. At the present time we await a response from the CRA which will show us how to proceed.

iii. Preparing a financial statement for the 2014–15 year with the accountant and re-compiling financial information from the past 5 years into a form that is in accordance with the Canadian generally accepted accounting principles (GAAP) as set out in the Canadian Institute of Chartered Accountants Handbook. These compilations will be needed to provide information to submit to the CRA. The 2014–15 statement was sent to the members and will be presented at this AGM.

iv. Setting up registration forms on regonline for online payment of membership fees.

v. Arranging for CAIMS to have a permanent address for use in communicating with government departments instead of using the Treasurer’s address which changes every few years. Johan Rudnick the Executive Director of the CMS has agreed to allow CAIMS to use the CMS address and forward CAIMS mail to the CAIMS Treasurer.

vi. Other day to day Treasurer duties.

In the next few months, I will continue to work with the accountant to prepare and submit income tax returns, prepare with the advice of the lawyer a document listing the operating policies of CAIMS, continue with the set-up and organization of the database and work with the organizers of next year’s
CAIMS meeting to set up the online registration system.
Motion (Ray Spiteri/Greg Lewis): Accept the Treasurer’s report. Carried.

(c) Secretary:
Sharene Bungay presented the following report as CAIMS•SCMAI Secretary.

Over the last year my main duties have been posting various items to the CAIMS webpage, including prize winners, e-News, etc. Due to various problems with the database and membership information this past year, the email list may not have been correct. If anyone has not been receiving correspondence from me, please let me know and I will ensure that you are added to the list. In addition to the e-News, the annual newsletter was sent out electronically this year rather than in hard copy. All e-news and newsletters are available on the CAIMS website.

Over the past year I have also worked on preserving the electronic history of the society by collecting all files, organizing them, and making them available to Executive members. Going forward, these files will also be available to the entire Board.

The election was held in April/May of this year. The votes were counted on May 26th, and I would like to welcome Matt Davison, Justin Wan, and Troy Day to the Board. Note that we require ratification of the election results at this meeting (see item 16 on the agenda).

Finally, I would like to thank all board members and members of the executive for their assistance in helping me do my job over the last few years. I look forward to working with Justin over the next few months during his transition to Secretary.

Motion (Pietro-Luciano Buono/Lucy Campbell): Accept the Secretary’s report. Carried.

12. Future CAIMS Meetings:
Ian reported that the 2016 meeting will be at the University of Alberta in Edmonton. This year we have come to a collegial understanding with the CMS to ensure that we would not hold our meetings at the same time in the future, and to juxtapose the meetings whenever possible. We have also tentatively agreed to organize reciprocal minisymposia in their Winter meeting and our Summer meeting. The format has not been determined but would like to begin in the December 2015 CMS meeting in Montreal. Anyone interested in organizing such a session should contact Ray.

Ian noted that proposals for the 2017 meeting would preferably be received around September.

For 2016, the meeting will be held June 26–30, with the following 6 themes:
• Canadian Symposium on Fluid Dynamics
• Applied Analysis and Dynamical Systems
• Mathematical Biology
• Financial Mathematics
• Scientific and High-Performance Computing
• Mathematics of Oil Industry

The main organizer is Peter Minev. Each theme has at least one organizer. The website for the meeting has been set up and will be available soon.

13. **Receipt of financial statements for the financial year ended April 30th, 2015:**

Ian noted that the financial statement for 2015 was prepared differently than in previous years, as described in the following letter from Treasurer Lucy Campbell (circulated to members electronically on May 19th, 2015):

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**Letter from the CAIMS Treasurer regarding the CAIMS 2014-15 Financial Statement** The accompanying document is an unaudited Compilation Report for the 2014–15 finances of CAIMS prepared by accountant Nicholas Ralph based on information provided to him by CAIMS Treasurer Lucy Campbell and former Treasurer Dhavide Aruliah.

Please note the following:

(a) This financial statement has been prepared in accordance with the Canadian generally accepted accounting principles (GAAP) as set out in the Canadian Institute of Chartered Accountants Handbook. In compliance with the GAAP, the information shown has been reported on an accrual basis. This means that if any revenue was earned during the accounting period represented (i.e. CAIMS became entitled to keep it, or some part of it), it is reported whether or not the relevant cash has been deposited in the CAIMS bank account. Money deposited which has not been earned is accounted for as a liability, not as revenue. Similarly, if an expense was incurred (i.e. CAIMS acquired and/or consumed something) during the accounting period represented, it is reported whether or not the payment to the vendor has been made. A payment for an item not yet acquired/consumed is accounted for as an asset, not as an expense. Consequently, the financial statement may include references to prepaid expenses (cash paid out ahead of consuming the item being acquired), accounts receivable (revenues earned but not yet received) and, likewise, accounts payable. Note that this is different from previous CAIMS financial statements which were reported on a cash basis, which meant that if cash was deposited or paid out in the accounting period,
it was reported; otherwise, it is not. Cash basis accounting does not conform to generally accepted accounting principles for not-for-profit corporations in Canada.

(b) The financial statement has also been amended to account for estimated HST and interest on HST; this is shown as a liability because it has not yet been paid. CAIMS is in the process of submitting a voluntary disclosure to the Canada Revenue Agency for these unpaid amounts will be filing tax returns this year.

(c) This financial statement will be presented to the Directors at the Board Meeting on June 7 and to the members at the AGM on June 9.

(d) Statements for financial years from 2010–11 to 2013–14 have also been prepared. Information from these statements will be used for filing tax returns with the Canada Revenue Agency.

Lucy Campbell
CAIMS Treasurer
15 May 2015

Lucy noted that the estimated HST is for taxes that we should have been charging on conference registration fees. We will have the exact amount after we hear back from the CRA. The professional fees are for the lawyer, accountant, and website setup.

The question of applicability of institutional (university) tax rebate on registration HST was raised. How this will be handled is unknown. Any tax on conference revenue will appear on the CAIMS tax return.

It was clarified that the 2014 annual meeting was approximately break-even. However, the statement does not clearly reflect that since the HST that should have been charged on registrations has been included. It was noted by Paul Muir that the goal has always been for the annual meetings to be break-even. However, over the past 5 years, we have managed to make money on several meetings. If we continue to incur high professional fees for various services and also have to pay HST on registrations, then we must ensure that future meetings are profitable. Lucy noted that we should set the registration fee to the amount we need to cover the meeting costs and then add HST. We are not likely to continue incurring high lawyer and accountant fees once we are done with the transition. We will require an accountant to prepare a financial statement once per year.


A not-for-profit corporation is required to appoint a public accountant every year at its AGM to prepare a financial statement at the end of the upcoming financial year. If the appointment of a public accountant is waived, this allows CAIMS the possibility of preparing a simpler, less costly type of financial statement at the end of the financial year.

Motion (Lucy Campbell/Ray Spiteri): Waive the appointment of a public accountant for 2015–2016. Carried.

At the moment, the CAIMS fiscal year runs from May 1–April 30. Corporations are free to choose their fiscal year. In order to allow time to prepare and distribute the financial statement at least 21 days in advance of the AGM, we would like to change the fiscal year to April 1–March 31. Note that such a change is also subject to the approval of CRA.

Motion (Lucy Campbell/Brian Wetton): Change the CAIMS fiscal year from May 1–April 30 to April 1–March 31, subject to approval by CRA. Carried.

15. **Fix number of directors:**

All board members are directors of CAIMS•SCMAI. In By-laws No 1. we have a fixed number of directors (12). However, we would like to have some flexibility in this number. In the Articles of Continuance, the minimum number is set at 3, while the maximum number is 17. We need to fix the number we want and the board suggests 12 (as currently)

Motion (Pietro-Luciano Buono/Lucy Campbell): Fix the number of Directors of the Corporation to 12. Carried.

16. **Confirmation and Ratification of Election of Directors**

We need to ratify the results of the election. For the single member-at-large position there were 3 candidates (Troy Day, Hermann Eberl, and Anthony Ware), and the person with the most votes was Troy Day. We thank Hermann and Anthony for standing.

Motion (Ray Spiteri/John Stockie): Ratify the result of the election for a Director of the Corporation and appoint Troy Day as a Director of the Corporation. Carried.

There was one nomination for the position of Secretary, and Justin Wan was elected by acclamation

Motion (Ray Spiteri/John Stockie): Ratify the result of the election for a Director of the Corporation and appoint Troy Day as a Director of the Corporation. Carried.

There were two nominations for President-Elect (Matt Davison and Thomas Hillen), with Matt Davison receiving the most votes. Our thanks to Thomas Hillen for standing.
Motion (Lucy Campbell/John Stockie): Ratify the result of the election for President-Elect of the Corporation and appoint Matt Davison as President-Elect of the Corporation. Carried.

Ian clarified that in the event that the results of the election were not ratified at the AGM there would be supplementary motions to vote for each position up for election at the AGM. The mail-in ballot is a pre-selection process.

Motion (Lucy Campbell/Greg Lewis): Approve the transition of Ray Spiteri from President-Elect to President of the Corporation Carried.

Motion (Pietro-Luciano Buono/Lucy Campbell): Approve the transition of Ian Frigaard from President to Past-President of the Corporation Carried.

17. **Other Business and Termination of Meeting:**

Luciano reported on items that he has been working on as Communications Officer:

- There was a meeting with Activity Group leaders (Dynamical Systems, Fluid Dynamics, Financial Math, Scientific Computing, Math Biology, Industrial Math) earlier this week. We are currently missing group leaders for Scientific Computing and Fluid Dynamics. The main goal of the activity groups right now is to have members, so everyone is encouraged to contact the leader of the group that they would like to join. At the moment, the Math Biology group is quite active. CAIMS can provide up to $1000 per year to support events within an activity group. The groups are a good way to build a community, and provide a means for others to contact a large but specific group. Anyone who would like to volunteer to be a leader should contact Luciano.

- CAIMS now has a Facebook page. It would be nice to have a banner that represents the research activities of CAIMS members. Anyone with images that could be used as a banner can send those to Luciano.

- The French translation of the webpage is underway (www.caims.ca/fr). There are a few items remaining to be done over the summer.

Motion (Lucy Campbell/Ray Spiteri): Adjournment (1:24pm). Carried.
Committee Membership

1. Cecil Graham Doctoral Dissertation Award Committee:
   Greg Lewis (Chair, UOIT), Colin Denniston (Western), Bartosz Protas (McMaster), Tony Ware (Calgary), Silvana Ilie (Ryerson).

2. Arthur Beaumont Distinguished Service Award Committee:
   Ken Jackson (Toronto), Sue-Ann Campbell (Waterloo), Paul Muir (St. Mary’s).

3. CAIMS Research Prize Committee:
   Jianhong Wu (Chair, York), André Fortin (Laval), Chris Budd (Bath, UK),
   Tony Humphries (McGill), Hans De Sterck (Monash, Australia).

4. CAIMS-PIMS Early Career Award in Applied Mathematics:
   Pauline van den Driessche (Chair, UVic) (PIMS), Daniel Coombs (UBC) (PIMS), Tom Hou (Caltech) (PIMS), Steve Ruuth (SFU) (CAIMS), Geoff Wild (Western) (CAIMS).

5. CAIMS-Fields Industrial Mathematics Prize:
   Matheus Grasselli (Chair, McMaster) (Fields), Mary Pugh (Toronto) (Fields),
   John Stockie (SFU) (CAIMS), Sean Bohun (UOIT) (CAIMS).

6. Nominating Committee:
   Matt Davison (Chair, President-Elect), Justin Wan (Secretary), Lucy Campbell (Treasurer), Pietro-Luciano Buono (Communications Officer).

7. Membership Committee:
   Troy Day (Chair, Queen’s), Lucy Campbell (Carleton), Justin Wan (Waterloo),
   Thomas Hillen (Alberta), Adam Metzler (Laurier).

8. CAIMS 2016 General Chairs:
   Peter Minev (Alberta), Thomas Hillen (Alberta), Rouslan Krechetnikov (Alberta),
   Morris Flynn (Alberta).

9. Liaison Committee:
   Troy Day (Chair, Queen’s), Jacques Bélair (Montreal), Lucy Campbell (Carleton),
   Shaohua Chen (CBU), Matt Davison (Western), Rod Edwards (UVic),
   Bin Han (Alberta), Tony Humphries (McGill), Cody Hyndman (Concordia),
   Silvana Ilie (Ryerson), Ken Jackson (Toronto), Serpil Kocabiyk (Memorial),
   Theo Kolokolnikov (Dalhousie), Shaun Lui (Manitoba), Roderick Melnik (WLU),
   Paul Muir (St. Mary’s), Isreal Ncube (Memorial), Bartek Protas (McMaster),
   Steve Ruuth (SFU), Ray Spiteri (Saskatchewan), Ken Sulston (UPEI),
   José Urquiza (Laval), Justin Wan (Waterloo), Tony Ware (Calgary),
   James Watmough (UNB), Brian Wetton (UBC), Hongmei Zhu (York).
This year the International Conference on Applied Mathematics, Modeling and Computational Science (AMMCS) was held jointly with the Annual meeting of the Canadian Applied and Industrial Mathematics (CAIMS) from June 7-12, 2015 at Wilfrid Laurier University in Waterloo. It was the 3rd conference in the AMMCS Interdisciplinary Conference series which has run biannually since 2011. Focusing on recent advances in Applied Mathematics, Modeling and Computational Science, the 2015 AMMCS-CAIMS Congress drew some of the top mathematicians and scientists from all over the world and was a true celebration of interdisciplinary research and collaboration involving mathematical, statistical and computational sciences within a larger international community.

Over 30 special and contributed sessions with mini-symposia covered a wide variety of topics. Among the main themes of the meeting this year were Applied Analysis and Dynamical Systems, Industrial Mathematics, Mathematical Biology, Financial Mathematics, all of which were well represented, both qualitatively and quantitatively in the diversity of the scientific program. Examples of other topics included mathematical neuroscience, game theory, Lie symmetry methods, multiscale methods, mathematical models in nanoscience and nanotechnology, and statistical equilibrium in economics, to name just a few. The 2015 AMMCS-CAIMS Congress also featured the 23rd Conference of the Computational Fluid Dynamics Society of Canada, which is also held semi-annually, together with the (more recent) 2nd Canadian Symposium on Scientific Computing and Numerical Analysis.

The Congress scientific committee included 15 internationally known scientists and mathematicians. In addition to three general chairs of the meeting, the organizing committee consisted of researchers from Waterloo, Guelph, Montreal, Saskatoon, and Vancouver. The meeting was held under the auspices of the MS2-Discovery Interdisciplinary Research Institute based at Wilfrid Laurier University.

Truly special highlights of the meeting were its 12 distinguished scientists and mathematicians who gave one-hour plenary talks, overviewing recent advances in mathematical, statistical and computational sciences. Among them Réka Albert (Pennsylvania State University), Eric Vanden-Eijnden (Courant Institute, New York University), Wing Kam Liu (Northwestern University), Stéphane Mallat, (École Normale Supérieure), Nicholas Zabaras (University of Warwick), Sebastian Schreiber (University of California, Davis), Tomasz Bielecki (Illinois Institute of Technology), Yingfei Yi (University of Alberta), Chris Budd (University of Bath), Kees Oosterlee (Delft University of Technology and CWI), Rémi Abgrall (University of Zurich), Paul Fischer (University of Illinois), as well as 5 semi-plenary speakers and 3 Congress Prize Winners.
All of these and other one-hour speakers were of the outmost quality, combining insightful science with a touch of humour, even making fun of members of the audience in the case of Jane Heffernan when she presented on “Infectious disease modelling over many scales”. A contribution equally noteworthy for its socio/political aspect as its scientific content was Chris Budd’s “Eight get reasons to do math”. In a Tour de force combining (British) humour with a spectacular overview of applications of mathematics that he himself developed, he provided ample evidence to convince the most sceptical politicians that mathematics can indeed be of societal and economic benefit (if only for biscuit integrity, and proper potato microwave cooking).

Over 600 participants from all continents attended the Congress. One social highlight of the meeting was the conference banquet, which this year featured a performance from a string quartet from Chile and a celebration of our national sport, with regional idiosyncrasy, complete with a foot-stomping tune from the incoming President and the outgoing and past Presidents of CAIMS.

Prizes were awarded at the Congress for presentations by junior participants. Dr. Benjamin Adcock of Simon Fraser University was the winner of the 2015 AMMCS Kolmogorov-Wiener Award for Young Researchers. The Congress had 8 AMMCS Student Prize Winners, while many other students received AMMCS student travel awards. There were also four CAIMS prizes awarded, and each of the recipients was given the opportunity to present a one-hour talk.

The 2014 Cecil Graham Doctoral Dissertation Award, which recognizes the most outstanding PhD thesis in Applied Mathematics defended at a Canadian University during the calendar year prior to the year of the award, was awarded to Dr. Diego Ayala of the University of Michigan. His thesis entitled “Extreme vortex states and singularity formation in incompressible flows” was completed under the supervision of Professor Bartosz Protas in the Department of Mathematics and Statistics at McMaster University.

The CAIMS-PIMS Early Career Award, given to a researcher less than ten years past the date of PhD at the time of nomination, which recognizes exceptional research in any branch of applied mathematics, interpreted broadly, was awarded to Prof. Jane Heffernan of York University, where she is an Associate Professor, the Director of the Centre for Disease Modelling, and a Tier II York University Research Chair.

The CAIMS-Fields Industrial Mathematics Prize, awarded to a researcher in recognition of exceptional research in any branch of industrial mathematics, interpreted broadly, and conducted primarily in Canada, was awarded to Prof. C. Sean Bohun of the Ontario University Institute of Technology.

The CAIMS*SCMAI Research award, the society’s preeminent research award, which was established to recognize innovative and exceptional research contributions in an emerging area of applied or industrial mathematics, was awarded to
Prof. Thomas Hillen from the Department of Mathematical and Statistical Sciences of the University of Alberta who will present his lecture at the next annual meeting.

The Congress benefitted from the financial support of the Fields Institute and PIMS, the Centre de recherches mathématiques, as well as Wilfrid Laurier University, NSERC and the Government of Ontario. Among others, traditional supporters of the meeting were Maplesoft, Sharcnet, as well as Springer, De Gruyter, and CRC Press. The meeting was held in cooperation with the Society of Industrial and Applied Mathematics and the American Institute of Mathematical Sciences.

The Congress was a big success in all respect. The IVth AMMCS International Conference in this series will be held August 20-25, 2017 (http://www.ammcs2017.wlu.ca/) and we look forward to welcoming you in Waterloo.

Jacques Bélair, Roman Makarov and Roderick Melnik (Montréal - Waterloo)
2015 CAIMS·SCMAI Research Prize

The CAIMS*SCMAI Research Award is the society’s preeminent research award, established to recognize innovative and exceptional research contributions in an emerging area of applied or industrial mathematics. The 2015 award was awarded to Prof. Thomas Hillen from the Department of Mathematical and Statistical Sciences of the University of Alberta. Prof Hillen has been cited for his outstanding contributions in areas of applied mathematics ranging from the mathematical modelling of cell movement and cancer to the qualitative analysis of partial differential equations and chemotaxis.

2015 CAIMS-Fields Industrial Mathematics Prize

The CAIMS-Fields Industrial Mathematics Prize is awarded to a researcher in recognition of exceptional research in any branch of industrial mathematics, interpreted broadly, and conducted primarily in Canada. The 2015 CAIMS-Fields Industrial Mathematics Prize was awarded to Prof. C. Sean Bohun of the Ontario University Institute of Technology. Prof. Bohun has been cited for his invaluable contributions to the Canadian industrial mathematics community and important insights into problems ranging from mineral processing to tissue engineering, leading to theoretical developments in thermoelasticity and free boundary problems.
2015 CAIMS-PIMS Early Career Award in Applied Mathematics

The CAIMS-PIMS Early Career Award is given to a researcher less than ten years past the date of Ph.D. at the time of nomination. The prize recognizes exceptional research in any branch of applied mathematics, interpreted broadly. The nominee’s research should have been conducted primarily in Canada or in affiliation with a Canadian university. The 2015 CAIMS-PIMS Early Career Award in Applied Mathematics was awarded to Prof. Jane Heffernan of York University, where she is an Associate Professor, the Director of the Centre for Disease Modelling, and a Tier II York University Research Chair. Prof. Heffernan was cited for the novelty, depth, and breadth of her research at the interface of immunology and epidemiology and the rare ability to clearly connect mathematics to applicable treatment strategies and public policy.

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2014 CAIMS·SCMAI Cecil Graham Doctoral Dissertation Award

The Cecil Graham Doctoral Dissertation Award recognizes the most outstanding PhD thesis in Applied Mathematics defended at a Canadian University during the calendar year prior to the year of the award. We receive a good number of nominations every year for this award, and the quality of the nominees is extremely high. The 2014 Cecil Graham Doctoral Dissertation Award was awarded to Dr Diego Ayala of the University of Michigan. His thesis was entitled “Extreme vortex states and singularity formation in incompressible flows” and was completed.
under the supervision of Professor Bartosz Protas in the Department of Mathematics and Statistics at McMaster University. The dissertation describes some truly novel work that uses optimal control theory and scientific computation to study extreme and singular behavior in the Navier-Stokes equations.
CAIMS•SCMAI 2016 Election: Call for Nominations
by Justin Wan

CAIMS•SCMAI will be holding an election in March 2016 for:

- Three Member-at-Large positions on the Board of Directors
- Treasurer
- Communications Officer

The three member-at-large positions will fill the positions to be vacated by Ronald Haynes, Thomas Hillen, and Greg Lewis whose terms will come to an end in 2016. The Treasurer appointment will be for a three-year term, and current Treasurer, Lucy Campbell, is willing to continue in this role. The Communications Officer appointment will be for a three-year term, and current Communications Officer, Petro-Luciano Buono, is also willing to continue in this role.

All members of CAIMS•SCMAI are invited to put forward names of candidates for these offices. Nominations should reach the CAIMS Secretary, Justin Wan (secretary@caims.ca) by January 31, 2016.

CAIMS•SCMAI Distinguished Mathematical Biology Lecture
by Frithjof Lutscher

We are excited to announce that we have inaugurated an annual CAIMS distinguished lecture in Mathematical Biology. The lecture will be given by an outstanding researcher at the interface of mathematics and biology and will highlight some of the amazing contributions that mathematics can make to solve importance scientific questions in the life sciences and generate novel understanding and deeper insights into the pressing problems of our times. These lectures will be held at different locations within Canada, and a video recording will be made available online soon after the lecture. There is technical support available from CAIMS as well as partial financial support. Applications to host future lectures can be submitted anytime and will be solicited once per year. The applications will be reviewed by the CAIMS board of directors.

The first CAIMS distinguished lecture in Mathematical Biology took place at York University on September 1st, 2015. The lecture was given by Laurent Pujo-Menjouet who is an Associate Professor at Université Claude Bernard, France. The title of the lecture was: “Mad cow disease: how collaboration between biologists and mathematicians lead to a new discovery about prion formation”.
News from the Fields Institute

by Carl Riehm

As of July 1 of this year, the Institute has a new Director - Ian Hambleton, the Britton Professor of Mathematics at McMaster University. A new Deputy Director will be appointed on July 1 of 2016 since Matheus Grasselli will be retiring from that position at that point.

The thematic program during the winter semester will be on Multiscale Scientific Computing: from Quantum Physics and Chemistry to Material Science and Fluid Mechanics, and that during July to December, 2016 will be Combinatorial Algebraic Geometry. There will also be focus programs in 2016 on Nonlocal Partial Differential Equations during May and June, and Topology, Stratified Space and Particle Physics in August.

Members of the CAIMS may also be interested in our regular seminars:

Colloquium/Seminar in Applied Mathematics: This is a monthly colloquium series for mathematicians in the areas of applied mathematics and analysis. The series alternates between colloquium talks by internationally recognized experts in the field, and less formal, more specialized seminars. In recent years, the series has featured applications to diverse areas of science and technology; examples include super-conductivity, nonlinear wave propagation, optical fiber communications, and financial modeling. The intent of the series is to bring together the applied mathematics community on a regular basis, to present current results in the field, and to strengthen the potential for communication and collaboration between researchers with common interests. We meet for one session per month during the academic year. The organizers welcome suggestions for speakers and topics. See http://www.fields.utoronto.ca/programs/scientific/15-16/applied_math/

Also:

2015-16 Fields Seminar Series on Quantitative Finance

2015-16 Fields Industrial Optimization Seminar

2015-16 Fields Working Lunch Seminar Series

See http://www.fields.utoronto.ca/programs/cim/

Toronto Quantum Information Seminar
http://www.fields.utoronto.ca/programs/scientific/15-16/QUINF/

Inverse Problems and Image Analysis Seminar
http://www.fields.utoronto.ca/programs/scientific/15-16/IPIA/

Other events in which members of the CAIMS might be interested are:
News from the Math Institutes

February 15, 2016
Keyfitz Lecture in Mathematics and the Social Sciences: Wolfgang Lutz

February 21-22, 2016
Talks by Cesar Hidalgo: Fields-Royal Canadian Institute (RCI) Lecture

May 30 to June 11, 2016
Séminaire de Mathématiques Supérieures: Dynamics of Biological Systems

June 2-4, 2016
Workshop on Nonlinear Optimization Algorithms and Industrial Applications

June 6-10, 2016
ICSCA 2016: Tenth International Conference on Scientific Computing and Applications

August 22-26, 2016
Conference on Methods of Modern Mathematical Physics, A Young Researcher Symposium on the Occasion of the 70th Birthday of Barry Simon

More details can be found on the Fields website, especially on the links at www.fields.utoronto.ca/programs/scientific/

News from the Centre de recherches mathématiques

by Galia Dafni

The CRM has seen a remarkable level of activity in 2015, both in quantity and quality, and this is not expected to change in 2016. Of particular interest to the applied mathematics community is the upcoming Thematic Semester on “Computational Mathematics in Emerging Applications”, January-July 2016, organized by Rustum Choksi, Jean-Christophe Nave and Adam Oberman (McGill). The unifying theme of the semester is the interaction of analysis with computation. Particular workshops will focus on level set methods, variational problems, materials, optimal transportation, and finite element methods. Selim Esedoglu (Michigan) will be in residence throughout the semester as the holder of the Aisenstadt Chair. In addition to the following five research workshops, the program will include related mini-courses and seminars, and a new joint Courant Institute/CRM seminar series.

WORKSHOPS:
Applications and New Frontiers for the Finite Element Method
May 9-13, 2016
Université Laval, Québec
Organizers: Jean Deteix (Laval), Miguel A. Fernández (INRIA & UPMC), André Fortin (Laval), José Urquiza (Laval), André Garon (Polytechnique Montréal)

New Challenges for the Calculus of Variations Stemming From Problems in the Materials Sciences and Image Processing - In Honour of the 60th Birthday of Irene Fonseca
May 16-20, 2016
Organizers: Rustum Choksi (McGill), Nicola Fusco (Napoli), Christopher J. Larsen (WPI), Giovanni Leoni (CMU)

Partial Order in Materials: Analysis, Simulations and Beyond
June 20-30, 2016
Organizers: Stanley Alama (McMaster), Lia Bronsard (McMaster), Apala Majumdar (Bath), Alejandro Rey (McGill)

Complex Boundary and Interface Problems: Theoretical models, Applications and Mathematical Challenges
July 4-8, 2016
Organizers: Jean-Christophe Nave (McGill), Robert Owens (Montréal), Pascal Poulet (Antilles), Hongkai Zhao (UC Irvine)

Computational Optimal Transportation
July 18-22, 2016
Organizers: Jean-David Benamou (INRIA), Adam Oberman (McGill)

FINANCIAL SUPPORT:
Support is available for visitors, postdoctoral fellows and graduate students wishing to attend the various events. All requests must be accompanied by a CV. Furthermore, graduate students are asked to send a letter of recommendation from their research supervisor. Please apply online on the thematic semester website: www.crm.math.ca/Computational2016

Among the highlights of the activities in 2015 were several aimed at creating collaborations with industry. The Montreal Industrial Problem Solving Workshop, the sixth in what is now a very successful tradition, took place at the CRM in August 2015: www.crm.umontreal.ca/probindustriels2015/

The Institute Innovation Platform (IIP) allowed the CRM to launch a new industrial collaboration initiative in the form of Networking Events (NE): www.crm.umontreal.ca/act/programme/progPhoto_en.shtml

Each NE lasts for one day and includes presentations by potential industrial partners, mathematicians working in universities, and a period for networking. It is hoped that each NE will result in applications for NSERC partnership grants. So far there have been four NE, in the following disciplines: aeronautics, 3D Printing
(or additive manufacturing), big data (in collaboration with IVADO, an operations research institute), and photonics. The CRM also organized, in collaborated with the Fields Institute and PIMS, a job fair for students at the 2015 CMS Winter Meeting in Montreal.

Another outreach activity regularly organized by the CRM is the series of lectures aimed at the general public, entitled Grandes conférences publiques du CRM. This year there was a particular emphasis on applications of mathematics, both past and present, in the talks by the three speakers: James C. Evans (University of Puget Sound) on the Antikythera mechanism, John Dudley (Université de Franche-Comté et Institut Universitaire de France) on a Thousand years of optics, 50 years of solitons, as part of the 24 hours of science program organized in honour of the International Year of Light, and Emmanuel Candès (Stanford), on the Art and science of systems with too many unknowns.

Other activities in 2015 included the second half of the extremely busy thematic year: “Number Theory, from Arithmetic statistics to Zeta elements”, including several lecture series by Aisenstadt Chair holders Sophie Morel (Princeton) and Pierre Colmez (CNRS & Paris VI Jussieu), followed by the Fall 2015 thematic semester: “AdS/CFT, Holography, Integrability”, featuring Bertrand Eynard (CPT, CEA Saclay) and Nikita Nekrasov (IHES / SCGP) as Aisendstadt Chair holders, as well as many exciting workshops bringing together researchers from a broad spectrum of fields in both mathematics and physics. One must add to that the three summer schools which took place in 2015 (the Deep Learning Summer School 2015, the CRM-PIMS Summer School in Probability, and the Séminaire de Mathématiques Supérieures: Geometric and Computational Spectral Theory), and the many other workshops included in the general program, such as the Conference on Topology, Geometry and Dynamics in honour of François Lalonde. There were also the second annual CRM Nirenberg Lectures in Geometric Analysis, with André Neves (Imperial College London) as the speaker, and the third instalment, in March 2016, featuring talks by Gunther Uhlmann (University of Washington), is eagerly anticipated. Congratulations to the following 2015 prize winners, some of whom have delivered or will deliver lectures at the CRM on their work: Louis-Pierre Arguin (Montréal and CUNY, André Aisenstadt Prize), Matíass Salibián-Barrera (UBC, CRM-SSC Prize), Kai Behrend (UBC, CRM-Fields-PIMS Prize) and Charles Gale (McGill, CAP-CRM Prize).

Finally, in 2015, the CRM was proud to welcome Louigi Addario-Berry (McGill) as its new Deputy Director - Scientific Programs, Emmanuel Giroux as the new CNRS director of the UMI-CRM, and the Montreal Institute for Learning Algorithms (MILA)/Institut des algorithmes d’apprentissage de Montréal as a new laboratory, headed by Yoshua Bengio (Montréal).
In 2016 PIMS will support a number of Collaborative Research Groups (CRGs) - which develop research and training networks that establish lasting interdisciplinary links between geographically dispersed groups of researchers at member universities. CRGs organize thematic activities, such as workshops, summer schools and seminars, make joint postdoctoral fellowship (PDF) appointments, and/or develop joint graduate training programs.

Going into 2016, PIMS will have seven CRGs in operation, including:

This CRG represents an extensive network of regional, national, and international researchers focused on improving the state of the art in this area. Building on existing relationships, they plan a number of new partnerships and joint activities.

Research interests include: Properties of Galois representations and automorphic representations attached to Abelian varieties; Prym varieties and intermediate Jacobians; Constructing varieties with given endomorphism rings, zeta functions and related properties; Rational points on moduli spaces; Point counting on varieties over finite fields; Efficient group arithmetic for Abelian varieties and Cryptographic applications of Abelian varieties.

The scientific focus of this CRG will be to study nonlinear partial differential equations (PDEs) with particular emphasis on problems involving pattern formation, defined in the broadest sense.

Research interests include: Collective Dynamics in Biology and Social Sciences; Concentration Phenomena and PDE’s on Surfaces and Stability, Bifurcation, and Rigorous Computing.

**2016 Event Highlights**

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<th>Date</th>
<th>Event Description</th>
<th>Location</th>
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<tr>
<td>10-16 January</td>
<td>Conference on Quantum Information Processing</td>
<td>Banff International Research Station</td>
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<tr>
<td>30 April - 1 May</td>
<td>Graduate Student Combinatorics Workshop</td>
<td>University of Manitoba</td>
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<tr>
<td>7-8 May</td>
<td>Pacific Northwest Number Theory Conference</td>
<td>Oregon State University</td>
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<td>25-26 April</td>
<td>Cascade Topology Seminar</td>
<td>University of Victoria</td>
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<td>30 April</td>
<td>ELMACON</td>
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University of British Columbia

April (date TBD) Dynamics Meeting
University of Victoria

14-15 May Western Canada Linear Algebra Meeting
University of Manitoba

16-17 May Prairie Discrete Math Workshop
University of Manitoba

13 May Changing the Culture
Simon Fraser University

16 - 20 May Nicolefest: Conference on Functional Analysis
University of Alberta

16-20 May Workshop on Homotopy Type Theory and Univalent Foundations, Fields Institute

16-20 May International Conference in Harmonic Analysis
University of Wisconsin, Madison

16-20 May Undergraduate Workshop in Supersymmetry
University of British Columbia

3-6 June Foundational Methods in Computer Science
University of British Columbia

13-16 June PIMS Young Researchers Conference in Mathematics and Statistics, University of Alberta

13-17 June Workshop on Nonlocal Variational Problems and PDEs
University of British Columbia

20-24 June Conference of the Canadian Number Theory Association
University of Calgary

6-8 July Canadian General Relativity and Relativistic Astrophysics
Simon Fraser University

7-8 July Canadian Abstract Harmonic Analysis Symposium
University of British Columbia

10-15 July International Biometrics Conference
University of Victoria

25 July-19 August Statistical Causal Inference and its Applications to Genetics
CNRS, Montreal

Summer (date TBD) Emerging Mathematics Instructors Workshop
University of British Columbia

(date TBC) Rarefied Gas Dynamics
University of Victoria

(date TBC) Alberta Number Theory Days
Banff International Research Station

See www.pims.math.ca for more details.
Two weeks in Vancouver
A Summer School for Women in Math

by Shawn Desaulniers, Rachel Kuske, Fok-Shuen Leung and Malabika Pramanik

We are pleased to announce a national summer school for women undergraduates, to be held at the University of British Columbia during August 15-25, 2016. The event follows the very successful programs of the same ilk held at the University of Waterloo in 2012 and 2014.

The summer school targets top undergraduate women from across Canada and the northwest United States, who are currently specializing in mathematics or in the closely related fields of computer science, physics and statistics. Through an intensive two week immersion, the program will expose them to the many facets of mathematical sciences as a career choice. Career opportunities in academia and industry will be given equal emphasis. We hope to encourage these gifted young women to continue on to graduate work. The program will teach them topics in mathematics that lie beyond the undergraduate curriculum, offer a glimpse into the life of a graduate student by introducing a research component, and reveal a wide range of resulting career options, all in a collaborative environment.

Students will participate in two mini-courses, taught by Professor Rachel Kuske (University of British Columbia) and Professor Laura Schaposnik (University of Illinois at Chicago). There will be a distinguished public lecture by Professor Gerda de Vries (University of Alberta). Guest speakers from academia and industry will speak about their work in mathematically-related fields. In addition, the program will include visits to businesses and institutions which employ mathematicians.

The event will be hosted by the Pacific Institute of Mathematical Sciences. Participants will be housed at the University of British Columbia, Vancouver campus. The students accommodation, meals and travel costs within Canada will be covered, subject to availability of funds.

The summer school is open to female undergraduate students studying mathematics or a related discipline at a Canadian university, with at least one year of studies remaining in their program. Canadians and permanent residents of Canada studying outside Canada are also eligible. Please encourage talented students from your institution to apply.

Applications for this very selective program are due by March 1, 2016. More information and an on-line application can be found on the website:

https://www.pims.math.ca/scientific-event/160815-twvasswim

or by contacting the organizers.
Summer School on Dynamics of Biological Systems
Séminaire de Mathématiques Supérieures (SMS)
May 30–June 11, 2016, Edmonton, Canada

Mark Lewis

Although the life sciences and mathematics have historically been separate, applications of dynamical systems to solving scientific problems in the life sciences and systems biology are now experiencing dramatic successes. These range from predicting dynamics of cancer tumours, to understanding infectious disease outbreaks, to revealing brain pathways used in brain function. The interplay between dynamical systems and biology works in two directions. In one direction, the mathematics is used to reveal biological structures. Here, models for the biological processes are written as complex dynamical systems. The analysis of these dynamical systems then reveals emergent properties, which then provide biological insight. In the other direction, the biological problems suggest new mathematical problems. This opens up new arenas for mathematical analysis, expanding the area of dynamical systems. Areas such as network theory, multi scale analysis, nonlinear waves, pattern formation and bifurcation theory, have been incredibly enriched from exposure to biological problems.

The purpose of this summer school is to focus on the interplay of dynamical and biological systems, developing the rich interplay between science and mathematics that has been so successful to date. Our focus will be on understanding the mathematical structure of dynamical systems that come from biological problems, and then relating the mathematical structures back to the biology to provide scientific insight. The summer school focuses on five key areas: complex bio-networks, multi scale biological dynamics, biological waves, nonlinear dynamics of pattern formation, and disease dynamics. For each of the five key areas, we have 2-3 world leaders who are also excellent communicators who will deliver a series of 2-4 one-hour lectures. We expect an average of eight hours of lecture per subject area, spread over approximately two days.

Confirmed Speakers: Réka Albert (Penn State), Henri Berestycki (École des Hautes Études en Sciences Sociales), Chris Cosner (University of Miami), Gerda deVries (University of Alberta), Zhilan Feng (Purdue University), Marty Golubitsky (Ohio State), Michael Li (University of Alberta), Yuan Lou (Ohio State), Philip Maini (Oxford), Benoît Perthame (Université Pierre et Marie Curie), Hong Qian (University of Washington), Jianhong Wu (York University).

Scientific Committee: Marty Golubitsky (Ohio State), Philip Maini (Oxford), Benoît Perthame (Université Pierre et Marie Curie), Jianhong Wu (York), Lai-Sang Young (Courant).

Local Organizers: Mark Lewis, Thomas Hillen, Yingfei Yi (University of Al-
berta).

**Sponsors:** Pacific Institute for Mathematical Sciences (PIMS), Centre de Recherches Mathématiques (CRM), Mathematical Sciences Research Institute (MSRI), Fields, University of Alberta, Institute des Sciences Mathématiques (ISM), Canadian Mathematical Society (CMS), Springer-Verlag, Centre for Mathematical Biology and the Université de Montréal.

**Application Deadline:** January 15, 2016. To view details on the summer school and application process see [http://www.pims.math.ca/scientific-event/160530-sdmsdb](http://www.pims.math.ca/scientific-event/160530-sdmsdb).

This annual Séminaire de Mathématiques Supérieures summer school has taken place for more than fifty years. Previously, it was on the campus of the Université de Montréal, and this is the first time it has been held elsewhere.
Canadian Applied and Industrial Mathematics Society
2016 Annual Meeting

June 26-30, 2016
The University of Alberta, Edmonton

Organizing committee:
Peter Minev, Thomas Hillen, Rouslan Krechetnikov and Morris Flynn

Contact:
caims2016@caims.ca
www.caims2016.caims.ca

Pacific Institute for the Mathematical Sciences