Atlantic Association for Research in the Mathematical Sciences

Research - Outreach - Community

Newsletter

Winter 2008

AARMS Summer School Moves to UNB

After three years at Dalhousie University, the Summer School is on the move. The seventh annual AARMS Summer School will be held in the Department of Mathematics and Statistics on the Fredericton campus of the University of New Brunswick, from July 13 to August 9, 2008, directed by Barry Monson. The summer school is intended for graduate students and promising undergraduate students from all parts of the world. Each participant will normally take two of the following courses. Each course consists of five ninety-minute lecture sessions each week. These are graduate courses approved by UNB, and transfer credit is facilitated to the extent possible.

* Computational Methods for PDEs, offered by Professor Anne Bourlioux, Université de Montréal (http://www.dms.umontreal.ca/Professeurs/bourliou/)

* Tropical Geometry, by Diane Maclagan, University of Warwick and Rutgers University (http://www.math.rutgers.edu/~maclagan/)

* Mathematical Finance, with R. Mark Reesor, University of Western Ontario (http://www.apmaths.uwo.ca/people/mreesor.shtml)

* Representation Theory of Algebras, given by Ralf Schiffler, University of Massachusetts-Amherst (http://www.math.umass.edu/~schiffler/)

Fredericton is the capital city of New Brunswick and is located on the beautiful St. John River, about 100 km from the Bay of Fundy. Tourist attractions include the Boyce Farmer's Market, the Historic Garrison District, the Beaverbrook Art Gallery, Christ Church Cathedral and (30 km upriver from the city) King's Landing Historical Settlement.

To contact the Director of the Summer School: (bmonson@unb.ca). For more general information: www.aarms.math.ca/summer

AARMS Seeks Director

AARMS is seeking a Director to provide scientific and administrative leadership. AARMS is a consortium supported by universities in the Atlantic provinces and the three Canadian mathematical sciences research institutes. It provides funding for mathematical sciences research in the region, an annual summer school for graduate students, and outreach by mathematical scientists to the schools, industry and other academic disciplines.

The successful candidate will have a distinguished record of research in mathematical sciences, and administrative or organizational experience (for instance, chair of a department, officer of a learned society, or editor of a journal). The Director should hold a fulltime faculty position in a university in Atlantic Canada. The term of office for the Director of AARMS is three years, with a preferred starting date of July 1, 2008. The AARMS budget includes funds for partial support of a postdoctoral fellow supervised by the Director.

Candidates will be considered by a search committee established by the AARMS Board of Directors. The committee includes members from five universities in the Atlantic region and one of the Canadian institutes. Inquiries regarding the position or the search process may be directed to the committee chair, Jon Thompson (jon@math.unb.ca).

Applications, or nominations with a statement of consent by the nominee, should be accompanied by a CV and the names of three referees, and sent to:

David Langstroth, Administrator, AARMS (dll@cs.dal.ca).

Consideration of candidates will begin on January 15, 2008 and continue until the position is filled. AARMS would like to thank Jonathan Borwein, the outgoing Director for his service to the organization. Please turn to page 3 for a fuller expression of this appreciation.

News

Les Statistiques se Portent Bien à Moncton

Le Professeur Thu Pham-Gia continue à travailler avec des collaborateurs en statistique bayesienne. Les articles suivants sont parus récemment ou paraîtrons bientôt : *Exact expression of Wilks*'s *Statistic and Applications*, à paraître in Journal of Multivariate Analysis, 2008c. Avec N. Turkkan, *Stress-strength Reliability: the Multivariate* Case, IEEE Trans. on Reliability, 56, 1, 2007; *The Joint Posterior-Predictive Method in the Bayesian Analysis of Stress-Strength Reliability*, Intern. Journ. of Reliability, Quality and Safety Engineering. 14, 1, 2007; *Exact Small Sample Size Determination in the Bayesian* Analysis of a (2x 2) Contingency Table with Dependent Proportions, to appear in Statistics, 2008a; *Statistical Discrimination Analysis Using the Maximum Function*, à paraître in Communic. in Stat., Computation and Simulation, 2008. Avec N. Turkkan et A. Bekker, *Bounds for the Bayes Error in Classification*, Statistical Methods and Applications, 16, 7-26. Le Professeur Pham-Gia a aussi présenté une communication à la réunion bi-annuelle de l'International Statistical Institute, en août 2007, intitulée *The Wilks*'s *Statistic of the Second Type in Multivariate Analysis* (voir Proceedings Intern. Stat. Inst., 56 ISI, Lisbonne). Le professeur Vartan Choulakian a continue le développement d'une version de l'analyse des correspondances basée sur la géométrie "Taxicab" (distance de Manhattan), présentée originalement dans l'article *Taxicab Correspondence Analysis, Psychometrica*, 71, 1, 2006. L'analyse des correspondances "Taxicab" est généralement plus robuste que la version classique, basée sur la métrique euclidienne. Le professeur Jacques Allard et M. Tobie Surette, un récent diplômé du programme de maîtrise, ont prepare l'article *A regression mixture with logistic weights for modeling heterogeneous crustacea growth data when the maturity phase is undetermined* (Canadian Journal of Fisheries and Aquatic Sciences, 2008, àÊparaître).

Future Events at the Atlantic Algebra Centre

AAC undergraduate competition: The Atlantic Algebra Centre will organize the second Undergraduate Algebra Competition. We invite undergraduate students of the universities of Atlantic Canada. The problems will appear on the web site of AAC in the middle of March 2007 (www.math.mun.ca/~aac).

Fourth mini course: On the dates May 19 - May 26, 2008, we will host a mini course on Hopf Algebras by Professor Nicolas Andruskiewitsch of the University of Cordoba, Argentina. Professor Kegel is a well-known mathematician whose contribution to the classification Theory of Hopf Algebras is recognized throughout the Hopf Algebra community. If you are interested in attending the mini course please write to aac@math.mun.ca. We have a limited support for the students from Atlantic Canada.

Next workshop: On the dates August 29 - September 2, 2008, we organize the International Workshop, Graded Algebras and Superalgebras. We are inviting a number of well-known specialists in the area. Among those who have agreed to come are Professors D. Leites (Sweden), V. Drensky (Bulgaria), I. Shestakov (Brazil and Russia). Those interested to participate, please write to aac@math.mun.ca.

Participants at recent AAC workshop on Groups, Rings and Lie Hopf Algebras

A Call for Proposals

We encourage mathematicians in Atlantic Canada to suggest programmes or themes for future AARMS activities in the region (workshops, conferences, periods of specialization and exceptional opportunities) and to direct all applications for funding to the AARMS Administrator. Contact details can be found at the the bottom of the page. There are no set deadlines so full detailed proposals can be submitted at any time. Proposals for short workshops with total requests for AARMS funding less than $5,000 are evaluated by the executive while more extensive proposals are referred to the Scientific Review Panel and responses will be given as quickly as possible. Proposals are usually expected to show a detailed program with a significant number of confirmed speakers.

People

New Directions for the Mathematics Learning Centre at Memorial

Last April I was invited to speak to parents at the Annual General Meeting of the Federation of School Councils of Newfoundland and Labrador about mathematics under-achievement in the province. While some parents expressed concern about transition issues from high school to post-secondary, many more parents were deeply troubled by the province's poor results in the 2006 grade 3 criterion-referenced tests in mathematics. More than half the children in the province received scores which were rated "unacceptable" in problem-solving, the primary focus of the recent APEF curriculum.

To address this matter, I spoke to parents about the principles of cognition that facilitate the effective learning of mathematical problem-solving and how the APEF curriculum can work against that. I talked to them about ways they can work with their children at home to provide some balance to the approach taken in the school curriculum. I also encouraged parents to avoid confrontations with their children's teachers because many teachers were also struggling to achieve an appropriate balance between traditional wisdom and new ideas in their presentation of the APEF material. And I reassured parents that the poor grade 3 results did not necessarily mean their children were forever doomed to be poor at doing mathematics.

My experience at the Federation's AGM led me to two new initiatives: (1) open public information sessions about math learning issues at Sobeys community rooms in the evening; and (2) the creation of a series of engaging, structured primary workbooks covering all the basic mathematical skills for those grade levels. Janis Hodder Walsh, a retired primary/elementary teacher and now a full-time instructor at the Math Learning Centre has designed and is writing these workbooks. They are meant to be used at home with minimal assistance from parents. The first volume is scheduled to be released in late February of this year.

Establishing close connections with the community in this manner has given us a better vision of potential workable solutions to our problems in mathematics under-achievement.

- Sherry Mantyka

Our Thanks to Jon Borwein

At the end of the Summer, AARMS reluctantly accepted the resignation, for personal reasons, of its Director, Jonathan Borwein. Although Jon's tenure as Director was only 20 months in duration he managed in that time to move the organization up another level in many important aspects. We can thank Jon for new initiatives such as the AARMS Book Series, and the Atlantic Shared Curriculum Initiative, for decentralizing some of the decision making process to the regions, for injecting into the organization a technological facility for distance collaboration which is unmatched in Canada amongst the mathematical institutes, and for bringing his extensive network of personal and professional connections to the benefit of the organization. The distinguished lecture series and the affiliations we have started to develop with ANSI in Australia and NZIMA in New Zealand are particular areas which benefitted from Jon's wide networks. Jon was also responsible for enhancing the administration and communication facilities of AARMS, by appointing a dedicated part time administrator, revamping the website, creating a regular newsletter and annual poster, and setting in place important documents to define the structure of the organization.

One of Jon's most important contributions, however, was the vision to see AARMS as a much bigger player in the national context. Jon began the process for establishing independent funding for AARMS from the provinces, the universities and the NSERC Major Resources Support program. Through meetings with provincial and university representatives a momentum has been established which we hope will lead to a successful application to NSERC in the autumn of 2008, creating a significantly enhanced budget and role for AARMS in the Atlantic region.

So, in the beginning of 2008, as Jon is on sabbatical in Australia we would like to express our thanks and best wishes for the future.

Theorem. A cat has nine tails.

Proof. No cat has eight tails. Since one cat has one more tail than no cat, it must have nine tails.

Recent and Upcoming Events

Groups of Self-Homotopy Equivalences and Related Topics
Organizers: Keith Johnson, Renzo Piccinini
Location: Dalhousie University, Halifax, Nova Scotia
Date: June 29 - July 5, 2008
Contact Information: renzo@mathstat.dal.ca

Workshop on Foundational Methods in Computer Science
Organizers: Dorette Pronk, Peter Selinger
Location: Dalhousie University, Halifax, Nova Scotia
Date: May 30 - June 1, 2008
Contact Information: selinger@mathstat.dal.ca

Joint AARMS/CRM Workshop on Recent Advances in Functional and Delay Differential Equations
Organizers: J. Appleby, H. Brunner, A. R. Humphries, D. E. Pelinovsky, P. Keast, P. Muir
Location: Dalhousie University
Date: November 1- 5, 2007
Contact Information: www.crm.umontreal.ca/Dynamics2007/avancees_e.shtml

Relativity in Cape Breton
Organizer: Robert van den Hoogen
Location: Mabou River Inn, Mabou, Nova Scotia
Date: October, 26 - 28, 2007
Contact Information: rvandenh@stfx.ca

Coast to Coast Seminars
Organizers: Veselin Jungic, David Langstroth
Location: Collaboration rooms across Canada
Dates: Every second Tuesday at 3:30pm Atlantic Time
Contact Information: www.aarms.math.ca/events/c2c.php

Key Dates

January 31, 2008	Deadline for 2008 PDF applications
March 15, 2008	Final decision on candidates in PDF competition
May 30, 2008	Workshop on Foundational Methods in CS
June 29, 2008	Groups of Self-Homotopy Equivalences
June 30, 2008	Deadline for supervisor reports for renewing PDFs

To rest in the ***AARMS*** *of perfection is the desire of any man intent upon creating excellence*

-Thomas Mann