Newsletter *Autumn 2008*

Letter from the Director

AARMS continues rapid expansion in its mission of supporting mathematical sciences researchers in the Atlantic region. The quality and range of workshops and conferences in the past year attracted distinguished researchers from North America and Europe; the 2008 Summer School recorded the highest student participation to date, a trend that is expected to continue; nominations for AARMS post-doctoral positions have seen a similar increase.

These successes provide compelling evidence in favour of AARMS' mission. The challenge going forward is to seek wider recognition of this momentum in order to secure increased funding from regional Universities, obtain commitments from provincial governments, and seek NSERC funding through the Major Resources Support (MRS) program.

With a vision of achieving what has already occurred in other parts of Canada through CRM, Fields and PIMS, AARMS submitted a Letter of Intent to NSERC for MRS support last May which was successful. A full proposal submitted in September outlines a significant expansion of current activities, including increased support for PDFs, collaborative groups and conferences/workshops. With matching funds from the Universities and governments, AARMS will have the opportunity to undertake new ventures such as industrial workshops, and increased engagement in outreach activities.

The first steps toward this goal have been positive. AARMS has recently secured a commitments of matching funds from NB and NS, with discussions underway with PEI and NL. We hope to have more good news to report by Spring.

- Viqar Husain

Atlantic Algebra Centre: from the second to third year

The second year of AAC concluded with two events. A mini course was given in May by Nicolás Andruskiewitsch (Cordoba) entitled *"Introduction to Pointed Hopf Algebras."* Working jointly with H.-J. Schneider (Muenchen), Dr. Andruskiewitsch recently obtained an important classification result about pointed Hopf algebras. Their paper will appear shortly in Annals of Mathematics. The other major event was in August, the International Workshop *"*Graded Algebras & Superalgebras". Plenary speakers included: Georgia Benkart, Vesselin Drensky, Dimitry Leites and Ivan Shestakov.

The third year of AAC started in September with the mini course "An Introduction to PI-algebras" by Vesselin Drensky, who is the author of two Springer monographs on the subject. This consisted of four lectures covering 1) Polynomial Identities and Central Polynomials of Matrices, 2) Structure Theory of PI-Algebras, and 3) Nagata-Higman Theorem and Shirshov Height Theorem.

Future plans include the sixth annual meeting "Combinatorial Algebra meets Algebraic Combinatorics" in January. The main speakers are Marcelo Aguiar, Francois Bergeron, Jaydeep Chipalkatti , Olga Kharlampovich, Hugh Thomas and Jerzy Weyman. The other workshop, associated with the core session "Groups and Hopf Algebras" of Summer Meeting of the CMS, will be held in June. The featured speaker will be Susan Montgomery.

AAC website: http://www.math.mun.ca/~aac

Nicolás Andruskiewitsch in Flat Rock, NL

News

2008 East Coast Combinatorial Conference

The East Coast Combinatorial Conference actively stimulates research in discrete mathematics in Atlantic Canada. This annual conference is held at the conclusion of the university term to initiate summer research and collaboration. The purpose of this conference is to:

- Support and bring together researchers in discrete mathematics in Atlantic Canada encouraging the sharing of ideas and problems.
- Highlight the major theoretical advances and applications in the area along with the development of new tools.
- Encourage active participation for graduate students providing exposure to new talent.

This year's conference was by all reports a success. Funded by AARMS and the Dean of Science at St. Francis Xavier University, over thirty researchers were in attendance, including representatives from each of the Atlantic Provinces. Speakers were given an opportunity to present a 25-minute lecture on their current research. In addition there were three special guest researchers from diverse geographical regions (Ernie Cockayne, William Kocay and Jason Brown) presenting hour-long talks. Thirteen graduate and undergraduate students attended. St Francis Xavier University provided local information and conference programs for all those in attendance.

CMS Math Camp at Dalhousie

The Department of Mathematics and Statistics at Dalhousie University hosted a math camp from July 6 till July 11, 2008 organized by Suraj Sikka (St. Mary's) and Roman Smirnov (Dalhousie). It was sponsored by the Canadian Mathematical Society (CMS) and Dalhousuie University. The main goals of the camp were to identify, stimulate and encourage mathematical talent among Nova Scotia high school students. The lectures were contributed by JasonBrown (Dalhousie), Robert Dawson (St. Mary's), David Hamilton (Dalhousie), Bert Hartnell (St. Mary's), Theodore Kolokolnikov (Dalhousie), Robert Milson (Dalhousie), Dorette Pronk (Dalhousie), Angela Siegel (Dalhousie), Bruce Smith (Dalhousie). For additional information refer to the math camp website at

http://www.mathstat.dal.ca/~smirnov/cmsdalmathcamp08.html

Watch out for our new online application process for the postdoctoral fellowship competition (expected to be active November 2008)

Atlantic Relativity Miniconference

The 2008 Atlantic Relativity Mini-Conference was held May 10-11 at UNB in Fredericton. The plenary speaker was Bei Lok Hu (Univ. of Maryland). He gave two talks, on emergent and quantum gravity and on structure formation via stochastic gravity. There were contributed talks by Ivan Booth (Mem. U) on horizons and geometry of Vaidya spacetime; Johan Brannlund (Dal. U) on holonomy, decomposability and GR; Jack Gegenberg (UNB) on tachyons, cosmology and the RG flow; Viqar Husain (UNB) on critical behavious in quantum gravitational collapse; George Jones (UNB-SJ) on rotating wormholes; Andreas Kreienbuehl (UNB) on quantized FRW with a massless scalar field; Haitao Liu (UNB) on 4D WZW models; Sanjeev Seahra on branworld cosmological perturbations and finally Ben Tippett(UNB) on counterexamples to the Penrose inequality. In addition to the talks and discussion, there was a catered (actually Lebanese take-out) conference banquet at Jack Gegenberg's home. It was a successful meeting, and we hope that the series will continue, perhaps at Dal U, in 2009.

16th Workshop on Foundational Methods in Computer Science

The 16th Workshop on ``Foundational Methods in Computer Science'' (FMCS 2008) was held in the Department of Mathematics and Statistics at Dalhousie University from May 30 -- June 1, 2008. FMCS is an annual workshop bringing together researchers in mathematics and computer science with a focus on the application of category theory in computer science. This year's workshop was organized by Dorette Pronk and Peter Selinger (Dalhousie).

The scientific program consisted of four tutorials aimed at students and newcomers to category theory, as well as a day and a half of research talks. There was also a special session in honor of Ernie Manes's 65th birthday, organized by Philip Mulry (Colgate).

Invited tutorial lectures were given by Pieter Hofstra (Ottawa), Ernie Manes (Massachusetts), Paul-André Melliès (Paris 7), and Andrea Schalk (Manchester). In addition, there were 18 contributed research talks. 31 researchers attended in the workshop, including 11 graduate students. Funding was provided by AARMS, as well as the President's Office, the Vice President's Office, and the Faculty of Science at Dalhousie.

People

Martin van Bommel of STFX one of Atlantic Canada's best teachers

Computer science professor Dr. Martin van Bommel has been named recipient of the 2008 Association of Atlantic University (AAU) Distinguished Teaching Award. He will receive the honour Sept. 17 during a banquet in Fredericton.

"My first reaction was 'no way.' It just floored me. I am very flattered," a humble and excited Dr. van Bommel said in an interview. Others though were quick to sing his praise.

STFX president Dr. Sean Riley, faculty members and former students wrote glowing letters in a nomination package for the award, which is based on an educator's overall demonstration of knowledge, their ability to engage students and inspire a lifelong interest in learning.

Dr. van Bommel says for him the primary draw is seeing the students excel, and the ability at STFX without huge class sizes to treat students as individuals. Dr. van Bommel graduated from STFX in 1988, and says he had such a wonderful experience with his professors, he chose to return and continue the tradition of leaving a lasting impression on students. "What inspired me to go into teaching in the first place were the professors here at STFX. I was inspired by their interactions with students, treating them as individuals, taking the extra time, and involving students in their research."

Since 1995, Dr. van Bommel has taught more than 20 different courses in computer science, information systems, engineering and mathematics. He won STFX's Outstanding Teaching Award in 2006.

Students and staff often comment on his passion for his work, his dedication to students, and his open door policy. In quantitative course evaluations, he is well above university and department norms, with students repeating how he facilitates learning in an atmosphere were they feel comfortable asking questions, and learning is the ultimate goal.

He also supervises about three students a year, chairs the departmental graduate studies committee, which oversees the newly developed master's in computer science program, and has been chair of the department of mathematics, statistics and computer science since 2004. His research program has been strong, maintaining NSERC Discovery Grant support since 1997.

- reprinted from www.stfx.ca

People Moving On

AARMS is grateful to all of the people who contribute to its organization and its activities. Here we would like to single out a few people for special thanks. **Carl Breckenridge** has recently retired as VP Research at Dalhousie and has stepped down from our Board. Thanks to Carl for all your positive contributions and we welcome the new Dalhousie VP, **Martha Crago**. **Ivar Ekeland** has recently stepped down as Director of PIMS to be replaced by **Alejandro Adem**, and at CRM **François Lalonde** has finished his term. His replacement is Anne Bourlioux, the Acting Director. Our thanks to Ivar and François and we welcome Alejandro and Anne onto our Board. We also would like to thank **Bob Lucas**, who has stepped down as Dean of Science at Memorial and we welcome **Mark Abrahams**, his replacement, onto the Board. And, we would like to thank **Dan Ryan**, the outgoing Chair of Math and Stats at UPEI for his service to the Board. Dan is moving out west to take up the position of Dean of Science at the University of the Fraser Valley. On the Scientific Review Panel, we would like to thank **Bruce Smith** and **John Clements** for their services over the past few years. And, we welcome **Franklin Mendivil** onto the SRP as a new member.

Jonathan Borwein writes ISI hot paper in Mathematics

The article, published in the Journal of Convex Analysis, is titled *Maximal monotonicity via convex analysis*. In an interview on the Science Watch website (sciencewatch.com), Jonathan Borwein describes the significance of this paper:

" Monotone operators were invented in the early '60s as a way of studying solutions to (elliptic) partial differential equations. They also capture the first-order behavior of convex functions. As such they are quite fundamental objects both analytically and algorithmically in fields such as functional analysis, optimization, mathematical economics, and elsewhere."

"After their basic theory was worked out in the sixties, the remaining questions seemed inaccessible until researchers such as Jean-Paul Penot, Stephen Simons, Nami Fux Svaiter, Mircea D. Voisei, Constantin Zalinescu, and many others began to insightfully exploit the properties of the Fitzpatrick function (as noted this is a convex function which captures much of the structure of these more general monotone objects). "

Recent and Upcoming Events

International Symposium in Statistics (ISS) on Inferences in Generalized Linear Longitudinal Mixed Models

Organizer: Brajendra Sutradhar

Location: Memorial University, St. John's

Date: July 20-22, 2009

Contact Information: Brajendra Sutradhar

Combinatorial Algebra Meets Algebraic Combinatorics: Sixth Annual Meeting

Organizers: Yur Bahturin, Nantel Bergeron, Sara Faridi, Tony Geramita, Mikhail Kotchetov

Location: Memorial University, St. John's, Newfoundland

Date: January 16-18, 2009

Contact Information: Sara Faridi\

APICS Meeting: Math and Stats Colloquia

Organizer: Jacques Allard

Location: Université de Moncton

Date: October 17-19, 2008

Contact Information: Jacques Allard

Canadian Hopf Algebras and Noncommutative Geometry Meeting

Organizers: Alain Connes, Piotr Hajac, Dan Kucerovsky, Henri Moscovici, Bahram Rangipour

Location: University of New Brunswick, Fredericton, New Brunswick

Date: September 2 - 5, 2008

Contact Information: Dan Kucerovsky

Graded Algebras and Superalgebras

Organizer: Atlantic Algebra Centre

Location: Memorial University, St John's, Newfoundland

Date: August 29 - September 2, 2008

Contact Information: Yuri Bahturin

Key Dates

September 30, 2008	Deadline for Autumn Call for Proposals
December 15, 2008	Deadline for applications to 2009 PDF Competition
January 15, 2009	Deadline for Winter Call for Proposals
January 16, 2009	Combinatorial Algebra meets Algebraic Combinatorics
July 20, 2009	International Symposium on Statistics

I sing of **AARMS** *and the man*

-Virgil