

## Hugh Morris Endows Distinguished Lecture Series at PIMS



Hugh Morris

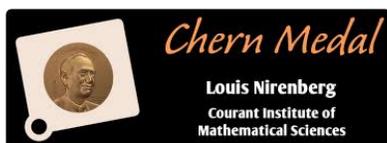
Dr. Hugh Morris, former Chair of the PIMS Board of Directors and a longtime friend of the mathematical sciences, has generously endowed a yearly lecture series at PIMS. The objective of the **Hugh C. Morris Lecture Series** will be to attract the world's top mathematical scientists to deliver presentations on current research topics to PIMS sites in Western Canada and Washington State.

Dr. Morris served on the PIMS Board for over ten years and has over 40 years of experience in the mineral industry, including a term as Chairman and Chief Executive Officer of Imperial Metals. He is a fellow of the Royal Society of Canada. Dr. Morris has demonstrated special interest in national and international scientific and professional associations and has been a member of NSERC's Council and Chairman of the Board of Directors of the Lithoprobe Project.

The first speaker for what will be the most prestigious lecture series hosted by PIMS is George Papanicolaou from Stanford University, who will deliver the inaugural Hugh C. Morris Lecture on March 11 in Vancouver. Papanicolaou, an applied mathematician, is a member of the U.S. National Academy of Sciences, and won the SIAM von Neumann Prize (2006) and the William Benter Prize in Applied Mathematics (2010).

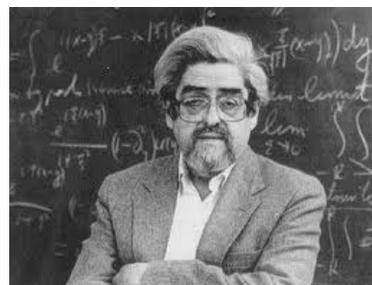
## Louis Nirenberg, First Recipient of the Chern Medal, Receives University of British Columbia Honorary Degree

At the International Congress of Mathematicians held in Hyderabad, India this past August, Louis Nirenberg, from the Courant Institute for the Mathematical Sciences at New York University, was awarded the inaugural Chern Medal for his role in the formulation of the modern theory of non-linear elliptic partial differential equations and for mentoring numerous students and post-docs in this area. The Chern Medal is awarded every four years by the International Mathematical Union to an individual whose lifelong outstanding achievements in the field of mathematics warrant the highest level of recognition. The Chern Medal consists of a medal and a monetary award of 500,000 US dollars.



In addition to this prestigious prize, Professor Nirenberg has received many other awards and honours, including: the American Mathematical Society's Bôcher Prize in 1959, the Jeffrey-Williams Prize of the Canadian Mathematical Society in 1987, the Steele Prize of the AMS in 1994 for Lifetime Achievement, the Crafoord Prize in 1982 and the U.S. National Medal of Science in 1995.

Professor Nirenberg was born in Hamilton, Ontario and obtained his undergraduate degree from McGill University before emigrating to the United States. He has shown a longstanding interest in the Canadian mathematical community, mentoring and supporting many of our colleagues. This fact, and his enormous contributions to the mathematical sciences, were recognized by the University of British Columbia, which awarded him an honorary degree during its 2010 Fall Congregation (November 24-26, 2010). He was in residence at PIMS during the week.



Louis Nirenberg

## PIMS At A Glance

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- Dr. G. M. "Bud" Homsy  
Deputy Director
- Dr. Mark Gotay  
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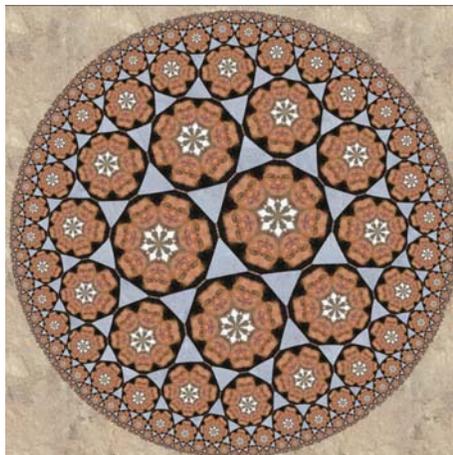
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## Director's Blog



It is a great pleasure for me to write a few lines for the readers of the PIMS Newsletter. As you may have noticed we have modified the format and changed the name to better reflect its intended audience.

This has been a very exciting fall term at PIMS: We have hosted a number of excellent speakers (Andrea Bertozzi from UCLA, John Coates from Cambridge, Joachim Cuntz from Muenster, Ron Graham from UCSD just to name a few). Our two newest Collaborative Research Groups (Number Theory and Mathematics of Quantum Information) have begun their activities and we are preparing to launch a new CRG in Applied

and Computational Harmonic Analysis next spring, based primarily at the UA.

Perhaps the most significant recent event for PIMS was the establishment of the endowed Hugh C. Morris Lecture Series thanks to a very generous gift by the former Chair of our Board of Directors, Hugh Morris. We are enormously grateful to Hugh for his vision in support of the mathematical sciences. His contributions to PIMS and science in Canada are truly outstanding. In addition he is a wonderful person who has provided valuable advice to PIMS Directors over the years. It has been a real privilege to count on his friendship and counsel. This endowment is the first of its kind for PIMS and is a testimony to the lasting quality and impact of our programs across a broad spectrum of the mathematical sciences.

On November 26 PIMS had the honour of fêting Louis Nirenberg from the Courant Institute (NYU), who recently was awarded the highly prestigious Chern Medal. Louis was born in Canada and has been a tremendous supporter of mathematics in this country. During his visit to UBC he was awarded a richly deserved honorary degree; it was a wonderful occasion to thank Louis for all his service to the worldwide mathematical community.

On September 25 there was a glittering event to announce the renewed funding for the Banff International Research Station by the funding agencies in Canada, the U.S., Mexico and Alberta. As a member of the BIRS Board of Directors I can testify to the remarkable job that our colleague Nassif Ghoussoub has done to make this possible. He deserves our wholehearted congratulations for a job well-done! BIRS is a wonderful resource for Canada and the world, and PIMS is proud to have been the parent of such an outstanding offspring.

Some of you will have heard that NSERC is putting together a Long Range Plan for the Mathematical and Statistical Sciences, and it has appointed a Steering Committee to receive input and help write a document on this. As a member of this committee I would like to encourage everyone to provide ideas and propose novel ways in which NSERC can help the mathematical and statistical communities move forward. Although Canada can be very proud of its many accomplishments in mathematics and statistics, we cannot rely on past successes and it is up to all of us to come up with a great plan for our future development.

Finally, I can report that progress on the building which will house the new PIMS-UBC headquarters continues at a good clip - we are scheduled to move in by September 2012. For a live view of the construction please see <http://www.eos.ubc.ca/essb-images/livefeed.html>

Warmest regards,

Alejandro Adem

Director, PIMS

## PIMS Deputy Director Awarded Honorary Degree

George M. "Bud" Homsy, Deputy Director of PIMS and Professor of Mathematics and Mechanical Engineering at UBC was awarded an honorary degree from the Université Paul Sabatier, in Toulouse, France, this past June. He was cited for his research and educational activities in the field of fluid mechanics, including multiphase flows, non-Newtonian fluid mechanics, hydrodynamic stability, and for spearheading the production of "Multimedia Fluid Mechanics".

## PIMS Scientific Review Panel Member Wins a Benter Prize

George C. Papanicolaou, Robert Grimmett Professor of Mathematics at Stanford University and PIMS SRP member, has been awarded the first William Benter Prize in Mathematics by City University of Hong Kong, in recognition of his exceptional contributions across a wide spectrum of research areas in applied mathematics. Papanicolaou has devoted his research career to bridging theoretical research and applied problems in areas including multi-scale and stochastic analysis, fluid dynamics, electrodynamics and, more recently, imaging analysis and financial applications.

## PIMS Welcomes New Board and SRP Members

The PIMS Board of Directors is responsible for the oversight of all aspects of PIMS operations. Ken Barker, George "Bud" Homsy and Michael Miller came `onboard' in 2010, while David Brydges, Sandy Murphree and Afzal Suleman stepped down.

PIMS' scientific activities are reviewed by an arm's-length Scientific Review Panel (SRP) of experts from various fields in the mathematical sciences. The SRP also witnessed a changing of the guard. Departing in 2010 were Carl de Boor, Richard Kenyon, and Donald Saari. Beginning renewable two-year terms are Gregory F. Lawler, Michael Overton and George Papanicolaou.

## North American Governments Provide \$10+ Million for BIRS

Hidden amongst the conifers at the Banff Centre in the Alberta Rockies, the Banff International Research Station (BIRS) was the recipient this September of more than \$10 million in continued funding for mathematical research for the period 2011–2015 from the governments of Canada, the United States, México and Alberta.

“It's the first time we have the National Science Foundation of the United States investing so much money in Canadian infrastructure in Alberta. And it's the first time the Mexican government invested in (research) outside México,” explained Nassif Ghoussoub of UBC, who is the scientific director and founder of the research station (and the founding director of PIMS). The funding includes \$3.25 million from the Natural Sciences and Engineering Research Council of Canada, \$3.4 million from Alberta Advanced Education and Technology (AAET), \$3.68 million from the U.S. National Science Foundation and \$250,000 from México's Consejo Nacional de Ciencia y Tecnología (CONACYT).



Nassif Ghoussoub

Every year the station hosts over 2,000 researchers from around the world for week-long brainstorming sessions. "Since its inception in 2003, BIRS has shown vision and leadership in creating an international meeting point for mathematical discovery and innovation," noted NSERC President Suzanne Fortier. "[It] represents the only serious joint educational and scientific research program in the NAFTA space," José Antonio de la Peña of México's CONACYT, said in a news release. "International collaboration in the sciences is a vital way we're building the knowledge-based next generation economy in Alberta," said the Honourable Doug Horner, Deputy Premier and Minister of AAET. Cora Marrett, acting director of the U.S. National Science Foundation, said the station is important for providing solutions to environmental, health, security and sustainability issues.

## Donald W. Stanley Appointed PIMS Site Director at the University of Regina



Donald W. Stanley

PIMS is pleased to announce that Donald W. Stanley, Associate Professor of Mathematics at the University of Regina, has been appointed PIMS site director. Stanley replaced Shaun Fallat, who had served as PIMS-UR site director since 2007. The PIMS community is grateful to Fallat for his outstanding service.

Stanley is a specialist in algebraic topology. He obtained his Ph.D. at the University of Toronto in 1997 and held postdoctoral positions in Berlin, Lille, Bonn and at the University of Alberta, after which he joined the faculty at the University of Regina.

## Cooperation Agreement between the Yangtze Center of Mathematics and PIMS

PIMS is pleased to announce that it has signed a collaborative agreement with the Yangtze Center of Mathematics at Sichuan University in Chengdu, China. The current center director, Professor Yingming Liu (a member of the Chinese Academy of Sciences) observed that cooperation between the Yangtze Center and PIMS will take place through exchanges of scholars and students as well as by the organization of joint events. Alejandro Adem, PIMS Director, noted: "The mathematical community at Sichuan University has strengths in several different areas of the mathematical sciences, including very active research in geometry and topology. Thus, I expect that this agreement will lead to some very interesting collaborations."



PIMS Director Alejandro Adem and YCM Director Yingming Liu

# PIMS Events

The goal of the **Western Algebraic Geometry Symposium (WAGS)** is to have twice-yearly meetings of algebraic geometers in the western half of the United States and Canada, with ample time for mathematical interaction among participants, as well as a number of research talks on topics at the leading edge of algebraic geometry. This May's edition took place at UBC.

The **Western Canada Linear Algebra Meeting (W-CLAM)** was the tenth biennial event with this title and was organized by researchers in western Canadian universities (ably assisted by colleagues from Washington State University, Pullman). The May meeting in Banff included three outstanding invited speakers: S. Friedland (U. of Illinois), I. Ipsen, (U. of North Carolina) and F. Tisseur (U. of Manchester).

**Bayesian Methods for Social Network Analysis** was the topic of a June summer school in Whistler. The summer school was oriented towards graduate students and young researchers, and a key goal was to bridge gaps between different research subcommunities (e.g. statistics, computer science, social and political science). It was followed by a two-day data workshop.

The **First Montreal Spring School in Graph Theory** was held to rave reviews in June. The spring school comprised two concurrent courses of lectures: Bruce Reed gave a 30 hour lecture course on "Structural results obtained from excluding graph minors," while Paul Seymour and Maria Chudnovsky gave a 30 hour course on "Structural results obtained by excluding induced subgraphs". In addition there were a few seminars from visiting professors.



First Montreal Spring School in Graph Theory

# Spring and Summer 2010

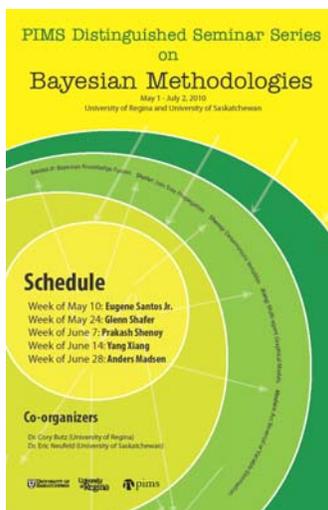
PIMS' flagship event this July was the two-week **PRIMA Conference on Geometric Analysis** at UBC. The first week of the program contained three exceptional mini-courses: Richard Schoen (Stanford University) spoke on the interplay between positive curvature, minimal surfaces and the Ricci flow; Gang Tian (Peking University and Princeton University) outlined a Kähler Ricci flow approach to the minimal model conjecture in algebraic geometry, introduced a new curvature flow on Hermitian manifolds and discussed the recent developments in the field. Warner Ballmann (Bonn University and Max-Planck Institute) lectured on Dirac operators on non-compact manifolds. Basic background accessible to graduate students in the field was introduced at the beginning of these lectures and many open problems were discussed at the end.



Richard Schoen

The workshop in the second week covered a fairly wide range of topics in geometric analysis: geometric evolution (Ricci flow, mean curvature flow, harmonic map flow, and  $L^2$  curvature flow), Willmore surfaces, conformal geometry, compactness of manifolds with a lower Ricci curvature bound, the Yamabe problem on orbifolds and manifolds with boundary, Kobayashi-Hitchin correspondence for D-modules, and extremal Kähler metrics.

Many statistics researchers affiliated with PIMS universities in the Pacific North-West work in the area of environmetrics: climate change and its impacts, agriculture, forestry, fisheries, etc. The aim of the **April Workshop on the Creation of a PIMS Environmetrics Research & Training Centre** at SFU-Vancouver was to discuss the idea of forming a regional centre in the field, building on research strengths at UBC, UBC-O, SFU, UW, UVic, UNBC and agencies such as Environment Canada, the Department of Fisheries and Oceans, the Pacific Forestry Centre, and Agriculture and Agri-Food Canada. This exploratory meeting was organized by the PIMS Collaborative Research Group in Environmetrics. Discussions on this are underway.



There were numerous seminar and lecture series at PIMS universities these past months. Standouts included George Kiladis of NOAA, who was the **Special PIMS Speaker** at UVic this July. He gave a series of three lectures on the dynamics of the atmosphere. Persi Diaconis was back in B.C., this time to give the **Niven Lecture** at UBC. He spoke on "The Search for Randomness." "Quantum Unique Ergodicity and Number Theory" was the topic of the **PIMS-UBC Distinguished Lecture** by Kannan Soundararajan of Stanford University in April. Also, The Number Theory CRG organized this year's **PIMS West End Number Theory Seminars** and supported the **PIMS-UBC-SFU Number Theory Seminar**, and UR hosted the **PIMS Distinguished Seminar Series on Bayesian Methodologies**. (See poster on the left.)

# PIMS Events

Two Quantum Information CRG events were held at UBC this July: the **Workshop on Quantum Algorithms, Computational Models, and Foundations of Quantum Mechanics** and the **10th Canadian Summer School on Quantum Information**. Highlights of the former included talks on "Quantum metropolis sampling," which reported progress on the use of quantum computers as simulators for physical systems, and "Fast decoders for topological quantum codes," which presented an important development in quantum coding theory.

The **PIMS 2010 Summer School in Probability** took place at the University of Washington and Microsoft Research over a three week span in June. Main courses on "Exchangeable Coalescents" and "Random surfaces and quantum gravity" were presented by Jean Bertoin (Université Pierre et Marie Curie) and Scott Sheffield (MIT), respectively. There were also five short courses on various topics.

Sixteen promising senior-level undergraduate students as well as beginning graduate students were introduced to mathematical modelling and analysis as applied to real biological systems at the **7th Mathematical Biology Summer Workshop** at UA in May

The **Annual IGTC Research Summit** was held in Naramata, BC, and featured a workshop on "Stochastic difference and differential equations in biology," research talks, student presentations and a poster session. Participants were also able to enjoy a swim in Lake Okanagan in the mild October weather.



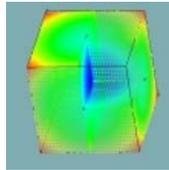
Lake Okanagan

SFU was a hotbed of PIMS activity this spring and summer. The **Pacific Northwest Number Theory Conference** returned after a two-year hiatus for a May meeting. As well it was the venue for the **45th Actuarial Research Conference** in July, which brought together about 90 academics, graduate students and practitioners from all areas of actuarial science promoting education, research and interaction with industry.



SFU Burnaby

**Computational Math Day** in August showcased the computational expertise of the SFU Mathematics Department. It also provided students with a great opportunity to summarize and present their work: there were 27 posters by grad students, undergrads, and even one high school student.



Solving Laplace's equation on a cube. (Courtesy of Nilima Nigam.)

SFU hosted two **PIMS-CSC Distinguished Speakers**. In April Michael Unser (École Polytechnique Federale de Lausanne) provided "Ten Good Reasons for using Splines for Signal/Image Processing."



Michael Unser

He was followed in May by Iain Couzin (Princeton) who lectured on "Collective Motion and Decision-Making in Animal Groups."



Iain Couzin

Networks were an important theme during 2010. In May and June the University of Victoria ran a summer school on **Mathematics for Biological Networks** as part of PIMS' International Graduate Training Centre (IGTC). The first part of the course focussed on Infectious Disease Networks, and it is believed that this is the first summer school devoted to the newly emerging area of disease modelling. Case studies for West Nile virus and influenza were presented. The second half introduced students to the Dynamics of Neuronal Networks, and included case studies on central pattern generation and Parkinson's disease. Fifteen "AMAZING scientists" from across North America were on hand to lecture on "very neat cutting edge material."



Benin

Over fifty mathematicians from seventeen different countries gathered in Cotonou, Benin, to take part in a June summer school on **Recent Developments in Nonlinear Analysis and Applications**. This event was organized for the first time by the Institut de Mathématiques et de Sciences Physiques and the department of mathematics of the Université d'Abomey-Calavi, in collaboration with some African mathematicians from Canada and the USA. During the week a series of four mini-courses were given by John Ball, on "the Q-tensor theory of liquid crystals;" Luis Caffarelli, on "Review of regularity theory for second order equations;" Nassif Ghoussoub, on "Mathematical problems arising in electrostatic micro-electro mechanical systems (MEMS) or on some nonlinear eigenvalue problems," and Cédric Villani, on "Landau damping."

# PIMS Events

Non-commutative geometry featured heavily in PIMS's events this year. In May there was the **Workshop on Non-commutative Dynamics and Quantum Probability** in Regina, a highlight of which was the lecture by Richard Powers, who reported on his most recent advances in the theory of E-semigroups and also provided a great deal of insight into the historical development of the field. This was followed by back-to-back June events at UVic: the **Summer School on Operator Algebras and Non-commutative Geometry** and the **Conference on Selected Topics in Non-commutative Geometry**.



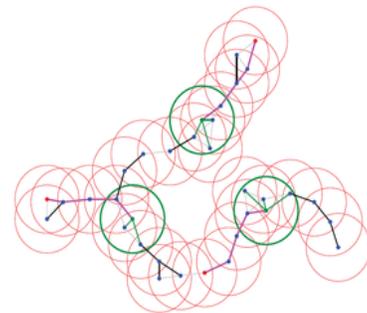
Summer School on Operator Algebras and Non-commutative Geometry

The **Canadian Young Researcher's Conference** welcomed 82 undergraduates, graduate students and postdocs to UA in May. The conference banquet included a lecture by John McKay on his famous "Monstrous Moonshine".

UW hosted **New Trends in Noncommutative Algebra**, an August conference in honour of Ken Goodearl's 65<sup>th</sup> birthday.

Other summer events included the **Summer School on Computer Models and Geophysical Risk Analysis** at UBC, the **Inverse Problems and Partial Differential Equations Summer School 2010** at UW, the **Minisemester on Evolution of Interfaces**, in Sapporo, Japan, the **West Coast Algebraic Topology Graduate Summer School** in Eugene, Oregon, and **Wave Phenomena IV: Waves in Fluids from the Microscopic to the Planetary Scale** at UA.

Two PIMS events were held in the Prairies this summer: The 2010 edition of the **Canadian Abstract Harmonic Analysis Symposium (CAHAS)** in Saskatoon in June, and the **2010 Canadian Conference on Computational Geometry** in Winnipeg in August. At the latter substantial progress was announced by H. Miyata and S. Moriyama on the enumeration of small oriented matroids. For instance, they established that there are exactly 47,923 5-dimensional polytopes with 9 vertices. (Their calculations required two months on 64 machines, each with 64 cores!) Furthermore, over a third of the open problems presented at the 2009 CCCG were either completely or partially solved by the 2010 conference!



A geometric 3-centre in a unit disc graph. (Courtesy of Stephane Durocher.)

PIMS, together with the IMA and the Centro de Investigación en Matemáticas (CIMAT), held a 10-day workshop on **Mathematical Modeling in Industry** in the colonial city of Guanajuato, along the "Silver Route" in México. The August workshop enabled thirty-six students (twelve from each country) to work in teams of six along with a mentor from industry and/or CIMAT, who helped guide the process of modelling, analysis, and computational studies of a real-world industrial problem. The problems included (i) optimization of a portfolio of equities, (ii) modelling a novel process for potash mining, (iii) production planning for water supply networks, (iv) modelling of two phase flow in a porous fuel cell electrode, (v) gravimetric measurements on moving and non-inertial platforms, and (vi) image analysis for aerial supervision of forest and suburban fires. The workshop was judged a great success, and received good coverage in the local press and Mexican television. PIMS, IMA and CIMAT have agreed to repeat the joint workshop in the future.

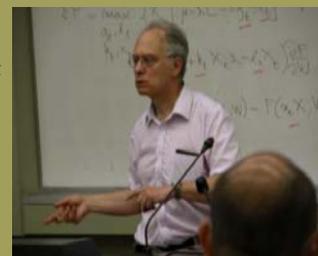
- Fadir Santosa (Director, IMA),
- Adolfo Sánchez Valenzuela (Director, CIMAT)
- Bud Homsy (Deputy Director, PIMS)



The July conference on **The Mathematics of Klee & Grünbaum, 100 Years in Seattle**, featured Francisco Santos' description of his recent counterexample to the Hirsch Conjecture. This conjecture says that the diameter of a convex polytope of  $n$  facets in  $d$  dimensions is at most  $n - d$ . It was proved for  $d \leq 3$ , but stood unresolved for 50 years before Santos cracked the problem in the spring of 2010. Another highlight was a presentation of Vic Klee's 1968 collection of "Unsolved problems in intuitive geometry," as amended and edited by Branko Grünbaum.

University of Washington

The MITACS-UBC **Summer School on Risk Management and Risk Sharing** covered topics that are at the cutting edge of research and of industrial practice. The ongoing financial crisis has moved the focus of financial mathematics away from arbitrage theory and towards the various aspects of risk. This in turn has raised a host of new research problems, which were addressed by courses on "Portfolio Management under Risk Constraints," "Asymmetry of Information and Risk Sharing in Finance," and "High-Frequency Trading." The last day of the June-July event was an Industrial Day, with a series of lectures by financial companies in Vancouver.



Ivar Ekeland

## PIMS Education

There were **Math Manias** in Victoria, Vancouver, Port Alberni, Surrey and Burnaby, and three **Math Fairs** in Calgary. PIMS co-hosted the annual **Changing the Culture** conference and the **Sharing Math** conference, both at SFU in May, and also sponsored the annual **Elementary Math Contest** in Vancouver. PIMS also helps out with the Calgary Science Network.

In mid-October SFU started with the 14th session of the **A Taste Of Pi** series of talks and activities for high school students. This time we have accepted 90 students from 16 schools. The first speaker was Dr. Kate Stange, a postdoc with the SFU Department of Mathematics and PIMS. The consensus was that she gave an excellent talk!

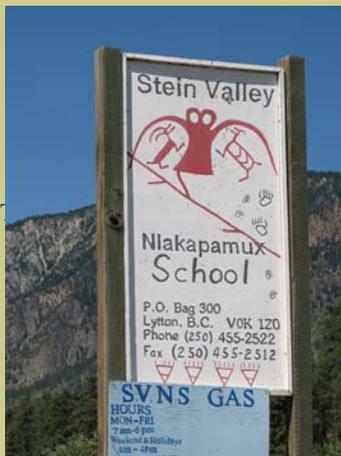


A Taste of Pi

On the post-secondary level, PIMS has recently gained several Education Associates: Mount Royal University (Calgary) and Douglas College (New Westminster). PIMS' other Education Associates include 6 other colleges in BC and 3 in Alberta: Camosun College (Victoria), Vancouver Island University (Nanaimo), Okanagan College (Kelowna), University of the Fraser Valley (Abbotsford), Langara College (Vancouver), Red Deer College, Thompson Rivers University (Kamloops), Concordia University College (Edmonton), and Grant McEwan University (Edmonton). David Leeming of UVic, Coordinator of the PIMS Education Associates Program, hopes to sign up more in 2011.

## Education Programs

PIMS collaborates closely with First Nations (FN) schools and educators in an effort to improve aboriginal math programs and promote interest in mathematics among FN communities. In particular, PIMS is currently working in partnership with the First Nations Education Steering Committee in the development of math assessment tools to be implemented in FN schools around BC. Other outreach programs that PIMS is involved with include:



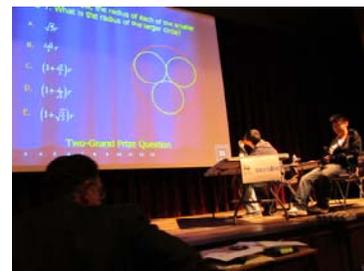
Stein Valley Nlakapamux School

- providing scholarships to exemplary FN students,
- developing mentorship programs and math clubs in Vancouver schools which have substantial aboriginal populations, such as Britannia, Templeton and Windermere Secondary Schools and
- holding math summer camps and running teacher workshops at FN schools throughout BC.

*PIMS is grateful to private donors, the BC Ministry of Advanced Education, the federal government, the Vancouver Foundation and other organizations for their support of these activities.*

The popular American Mathematical Society game show **Who Wants to be a Mathematician** was hosted by UBC and PIMS this October. The AMS began Who Wants to Be a Mathematician in 2001 and it has been held at universities and science centres from Boston to Hawai'i; this is its first appearance in Canada.

Eight of the Vancouver area's best secondary school math students competed for up to \$3000 in cash. Andre Xu from Point Grey Secondary won \$3000 after placing first in the competition and by answering correctly the bonus \$2000 question in three and a half tense minutes! Larry Liu from Point Grey Mini school won second place and \$500. There was an enthusiastic audience of 300 students, teachers and UBC faculty.



Andrew Xu and Larry Liu

**Math on the Move** was on the road again in April. This is a mobile version of the UR Math Camp that was initiated in 2003 by Kathy Nolan (Faculty of Education) and Harley Weston (PIMS Regina Education Coordinator). With support from PIMS the two faculty members and four mathematics education students delivered inquiry-based mathematics activities to high school students in Preeceville and Yorkton, Saskatchewan. Activities included a mystery involving pi, comparing jobs from newspaper ads; Barbie, toy cars and scaling; and a CSI type activity involving the length of a femur. Each day culminated with a Math Olympics.



Math on the Move



The **PIMS Education Prize** is awarded to a member of the PIMS community who has made a significant contribution to education in the mathematical sciences. This prize is intended to recognize individuals from the PIMS universities, or other educational institutions in Alberta, British Columbia, and Saskatchewan who have played a major role in encouraging activities which have enhanced public awareness and appreciation of mathematics, as well as fostering communication among various groups and organizations concerned with mathematical training at all levels.

[www.pims.math.ca/essential-information/opportunities](http://www.pims.math.ca/essential-information/opportunities)

Deadline for Nominations: March 15, 2011  
Winner Announcement in April



## CAIMS/PIMS Early Career Award in Applied Mathematics

The CAIMS/PIMS Early Career Award in Applied Mathematics 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 prize is to be awarded to a researcher less than ten years past the date of Ph.D. at the time of nomination.

Application Deadline:  
January 31, 2011

[www.pims.math.ca/essential-information/opportunities](http://www.pims.math.ca/essential-information/opportunities)

The Second Pacific Rim Mathematical Association (PRIMA) Conference will be held at Shanghai Jiaotong University in China.

Conference Date: June 24-28, 2013.

*Mark your calendars!*

