Submittee: Carissa Cameron Matthews
Date Submitted: 2010-06-08 11:03
Title: PIMS Calgary CRG Launch 2010
Event Type: Conference-Workshop

Location:
University of Calgary, Rozsa Centre

Dates:
April 6th, 2010

Topic:
PIMS' newest Collaborative Research Groups based at the University of Calgary, launch their activities on 6 April 2010 with two public lectures given by leading Canadian researchers in the respective fields of number theory and quantum information.

Methodology:
Lunch for CRG participants Public Lectures (2) Public Reception Dinner for CRG participants

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Objectives Achieved:
MQI CRG: All the principal investigators were present for the CRG Launch and met to discuss the upcoming workshop and summer school in 2010, the visiting lecturer series and general planning and operations. Scientific discussions took place but did not solve any problems; rather the discussions were focused on finding areas of common interest. Postdocs and students were present at the Launch and had the opportunity to meet, discuss science amongst each other and with the principal investigators, and discuss future visits and cross-collaboration.

Scientific Highlights:
No new scientific highlights.

Organizers:
Sanders, Barry, Physics and Astronomy, UC; Gour, Gilad, Mathematics and Statistics, UC; Greenberg Matthew, Mathematics and Statistics, UC; Cunningham, Clifton, Mathematics and Statistics, UC

Speakers:
Expanders, Group Theory, Arithmetic Geometry, Cryptography and much much more.... Dr. Eyal Goren,Mathematics, McGill University Abstract: The theory of expander graphs is undergoing

intensive development. It finds more and more applications to diverse areas of mathematics. In this talk, aimed at a general audience, I will introduce the concept of expander graphs and discuss some interesting connections to arithmetic geometry, group theory and cryptography, including some very recent breakthroughs. Biography: Eyal Goren is a professor of mathematics at McGill University, specializing in arithmetic geometry. He did his Ph.D. in the Hebrew university in Jerusalem, graduating in January 1997, under the supervision of E. De Shalit. After a postdoctoral period at Harvard University and Utrecht University, he arrived as a postdoctoral fellow at McGill University and became an assistant professor there in June 1999, and a full professor in June 2009. His research interests include moduli spaces of abelian varieties and curves, modular forms, complex multiplication and expander graphs. Quantum magic in secret communication Dr. Gilles Brassard, Computer Science, Universite de Montreal Abstract: Quantum Cryptography is the first near-term practical application of the emerging field of quantum information processing. It allows two parties who share only a short prior secret to exchange messages with provably perfect confidentiality under the nose of an eavesdropper whose computational power is unlimited and whose technology is restricted only by the accepted laws of physics. In this talk, we shall tell the tale of the origin of Quantum Cryptography from the birth of the first idea by Wiesner in 1970 to the invention of Quantum Key Distribution in 1983, to the first prototypes and ensuing commercial ventures, to exciting prospects for the future. No prior knowledge in quantum mechanics or cryptography will be expected. Biography: Professor of computer science since 1979 and Canada Research Chair at the Universite de Montreal, Gilles Brassard laid the foundations of quantum cryptography at a time when only a handful of people worldwide were interested in quantum information processing. Among his main other achievements are the invention of privacy amplification, quantum teleportation, quantum entanglement distillation and amplitude amplification. Editor-in-Chief for Journal of Cryptology from 1991 until 1997, he is the author of three books that have been translated into eight languages. He is a Fellow of the Royal Society of Canada (Academy of Science), of the Canadian Institute for Advanced Research and of the International Association for Cryptologic Research. Among his many awards, we note the E.W.R. Steacie Memorial Fellowship, the Killam Research Fellowship, the Prix Marie-Victorin, the Rank Prize in Opto-Electronics and the NSERC Award of Excellence.

Links:
http://www.pims.math.ca/scientific-event/100406-pccl
