## Report on the 14<sup>th</sup> Canadian Conference on General Relativity and Relativistic Astrophysics

Memorial University of Newfoundland July 9-12, 2012 Organizers: Ivan Booth, Hari Kunduri, Benjamin Tippett www.ccgrra14.ca

### **Description of Event**

The Fourteenth Canadian Conference on General Relativity and Relativistic Astrophysics (CCGRRA14) was held at Memorial University of Newfoundland, St John's. The meeting covered the broad range of relativistic research done in Canada including relativistic astrophysics, cosmology, mathematical and numerical relativity, and black holes. The meeting also attracted a number of international attendees, including two prominent mathematical relativists (Sergio Dain and Stefan Hollands) and a leading member of an international collaboration involved in gravitational wave detection (Patrick Brady).

The scientific program was based on one-hour plenary invited talks from international scientists, established Canadian researchers, and recent faculty appointments to Canadian universities. Experienced researchers (faculty, postdoctoral fellows) and graduate students contributed 30- and 20 minute talks respectively to specialized parallel sessions. The schedule was arranged so as to allow significant amounts of time for non-lecture interactions between the participants (particularly in the evenings and on Wednesday afternoon).

There were many excellent talks but highlights of the conference included Dain's report on geometric inequalities for dynamical black holes, Hollands' lecture on the relationship between black hole thermodynamics and instabilities, Harald Pfeiffer's talk on numerical simulations of black hole mergers, and Brady's status report on the LIGO gravitational wave detector. Finally, a popular science lecture, held in conjunction with the conference and supported by Memorial University, was a great success with an attendance of approximately 250. Robert Mann's talk on 'The Lighter Side of Black Holes' entertained the public and received local television, radio, and print coverage.

# A detailed schedule, including titles and abstracts, is available at the CCGRRA14 website: www.ccgrra14.ca.

#### Participation

In total, there were 34 participants – 18 faculty members, 8 post-docs and 8 graduate students. 29 were Canadian while 5 were international. Of the Canadians 9 were from the Atlantic region (Memorial or UNB, Fredericton) while 20 were from farther afield. The total was slightly below the average attendance for this series of meetings, particularly in terms of graduate students. We attribute this to the relative remoteness of the location which made it more difficult to fund graduate student travel. Furthermore, a major international conference on general relativity (the Thirteenth Marcel Grossman meeting) was held a week prior in Sweden.

Participant	Institution	Status
Ahmadzadegan, Aida	Waterloo	Graduate Student
Alaee, Aghil	Memorial	Graduate Student

Booth, Ivan	Memorial	Faculty
Bowden, John	Memorial	Graduate Student
Brady, Patrick	Wisconsin-Milwaukee (USA)	Faculty
Cannon, Kipp	CITA	Postdoc
Chu, Tony	CITA	Postdoc
Corbett, Brian	Manitoba	Mathematics instructor
Dain, Sergio	U. National de Cordoba (Argentina)	Faculty
Day, Andrew	New Brunswick	Graduate Student
Florik Cecillia	Perimeter Institute	Postdoc
Frey, Andrew	Winnipeg	Faculty
Frolov, Valeri	Alberta	Faculty
Gegenberg, Jack	New Brunswick	Faculty
Guo, Jun-Qi	Simon Fraser	Graduate Student
Hajian, Amir	CITA	Postdoc
Hobill, David	Calgary	Faculty
Hollands, Stefan	Cardiff (UK)	Faculty
Hussain, Viqar	New Brunswick	Faculty
Kunduri, Hari	Memorial	Faculty
Kunstatter, Gabor	Winnipeg	Faculty
Liko, Tomas	Alberta	Postdoc
Mann, Robert	Waterloo	Faculty
Mundlim, Bruno	Rochester (USA)	Postdoc
Park, Miok	Waterloo	Graduate Student
Pfeiffer, Harald	CITA	Faculty
Poisson, Eric	Guelph	Faculty
Raghoonunun, Ambrish	Calgary	Graduate Student
Schleich, Kristin	UBC	Faculty
Seahra, Sanjeev	New Brunswick	Faculty
Skakala, Jozef	U. Federal do ABC (Brazil)	Postdoc
Tian, David	Memorial	Graduate Student
Tippett, Benjamin	Memorial	Postdoc
Witt, Don	UBC	Faculty

### **Summary of Budget and Expenses**

CCGRRA14 is very grateful for receiving strong support from a number of national research institutes. These include: The Atlantic Association for Research in Mathematics Sciences (up to \$4000), the Canadian Institute for Theoretical Astrophysics (\$4000), and the Perimeter Institute for Theoretical Physics (\$2000). The conference also received extremely generous support from the Memorial University Conference Fund Committee (\$8000), the Dean of Science (\$2000), and the Department of Mathematics and Statistics (\$1000). The University also provided rooms for our various events free of charge. Combining the direct financial support with \$8100 paid by participants (registration plus boat tour/banquet fees) we had just over \$29000 available to fund conference and associated activities.

A budget outlining expenditures is attached. However, to summarize, the biggest budget item was just over \$13312.95 for the invited speakers (travel, accomodation and registration). This was followed by \$5823.74 for other aspects of conference organization (opening reception, coffee breaks, reception and promotion of the public lecture plus miscellaneous costs) and support for graduate student and post-doc travel at \$2792.12. Finally the whale watching excursion and beach barbecue (which replaced the usual conference banquet) cost just under \$4249.82; this was paid for from dedicated fees from the participants as well as some general registration fees (to cover the invited speakers).

As can be seen from the budget, we will only require **\$796.38** of the \$4000 offered by AARMS. Monies from AARMS, PI and CITA were used exclusively to cover invited speaker travel and accommodations.

A group photo taken during the beach barbecue is also attached.

# CCGRRA 14: Final Budget Summary (Nov 26, 2012)

Attendance							
Number of full registraior	ns (professo	r or other fu	lly employed	d)			18
Number of students and	post-docs						16
Total number of partici	pants						34

Income				
Registration Income	#	unit price		
Full registrations	18	175	3,150.00	
Student/Post-doc registrations	16	125	2,000.00	
Tour + Banquet (optional) - Full	18	75	1,350.00	
Tour + Banquet (optiona ) - Student	15	50	750.00	
Adult Tour Guests	6	100	600.00	
Child Tour Guests	4	50	200.00	
Total			8,050.00	
Sponsor Income				
Atlantic Association for Research in the Mathematical Sciences	(AARMS)		796.38	
Perimeter Institute			2,000.00	
Canadian Institute for Theoretical Astrophysics (CITA)			4,000.00	
Contributions from Memorial University				
Conference Fund Committee			8,000.00	
Dean of Science			2,000.00	
Department of Mathematics and Statistics			1,000.00	
GST Rebate			333.25	
TOTAL INCOME			26,179.63	

Expenditures	
General Conference Costs	
Opening Reception	672.67
Coffee Breaks	1,771.16
Website (set-up, hosting, maintenance)	55.44
Bank Fees	48.00
Paypal Fees	126.10
Total	2,673.37
Public Lecture	
Reception (food)	1,765.74
Publicity (posters)	70.63
Classroom support	65.00
Total	1,901.37
Whale Watching Tour and BBQ	
Cost for Participants (33 adults, inc gratuity and GST)	3,331.47
Cost for Guests (6 adults, 4 children, inc gratuity and GST)	918.35
Total	4,249.82
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Organizer and Helper Costs	
1 Professor registration	175.00
6 Student/Post-doc registrations (\$125 each)	750.00
1 Professor Whale Watching	75.00
5 Student/Post-doc Whale Watching (\$50 each)	250.00
Total	1,250.00
Invited Speaker Costs (10 speakers)	
Registration (\$175 each)	1,750.00
Whale Watching Tour and BBQ (\$75 each)	750.00
Travel (airfares from Toronto, Milwaukee, London and Cordoba (Argentina)	5,495.63
+ ground transport to and from airports)	
Accommodation (mainly at Quality Hotel Harbourview, St. John's - 165.88/night/person)	5,317.32
Total	13,312.95
Student/Post-doc Support (9 people - registration and per diems)	2,792.12
TOTAL EXPENDITURES	26,179.63
BALANCE	-0.00

