EDUCATION NOTES

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A Tribute to Jim Totten

In March, 2008, the mathematical community lost a dear colleague, Dr. James Totten. Jim's work in research, outreach, teaching and problem solving spanned over 30 years. A conference, *Sharing Mathematics: A Tribute to Jim Totten*, that celebrates Jim's spirit will be held May 13-15, 2009 at Thompson Rivers University in Kamloops, BC.

The conference themes are outreach, enrichment, and innovation in mathematics education. We encourage all who knew of Jim's work to participate. The organizers include Jim Bailey (College of the Rockies), Rick Brewster, Faie DeBeck and Robb Fry (Thompson Rivers University), John Grant McLoughlin (University of New Brunswick), Shane Rollans and Mohamed Tawhid (Thompson Rivers University). They can be contacted at SharingMath2009@tru.ca. A website www.tru.ca/sharingmath/ is being set up.

"A Taste of Pi" – Long and Lasting

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The Mathematics Department at Simon Fraser University (SFU) has a long history of bringing the excitement and beauty of mathematics to high school students and the general public through various outreach programs. One of the recent additions to these activities is a program called *A Taste of Pi*.

A Taste of Pi was introduced in 2004 to provide enrichment activities to high school students during the school year. The title and idea of the program, as well as the logo, were the brainchild of Veselin Jungic. During each event, students participate in a mathematical presentation and a problem session, and, since 2007, also a science presentation. The program was initially funded by a NSERC PromoSciences grant and the SFU Department of Mathematics, and, later by the Dean of Science, the Interdisciplinary Research in Mathematics and Computational Sciences Centre (IRMACS), and the Pacific Institute for the Mathematical Sciences (PIMS). Information about the program, including the logo and a long (and still growing) list of exciting talks, can be found at the program's website: www.math.sfu.ca/atasteofpi/.

There are two series of talks per year, each consisting of three Saturday sessions: one during the spring in March, April and May, and another during the fall in October, November and December. Participation in the sessions is by invitation only. Letters announcing upcoming sessions are sent to all high schools in the Lower Mainland, public and private, 5-6 weeks before the beginning of each series of sessions. The letters ask mathematics department heads to nominate their best students from grades 9, 10 and 11 for the program. The organizers (Malgorzata and Veselin) review all nominations very carefully, but the vast majority of students are accepted and invited to participate in the program. The number of participants per session has been steadily growing and in Spring 2008 reached a high of 80. The invitees are asked to pay a $15 registration fee for each set of three sessions, to partially cover the costs, and as a commitment to attend the meetings. In many cases, the schools pay the registration fee. Teachers are invited to attend; they pay no registration fee. Usually, there are several teachers in the audience during each presentation.

The events are held in the most modern lecture room at SFU, the IRMACS Presentation Studio, from 9:00 until 12:30. Each event starts with a mathematics presentation, given by faculty members from the SFU Department of Mathematics, or occasionally by faculty visitors to the department. On occasion, colleagues from the mathematics department at UBC have given talks. We are very proud that, during the first five years of the program, we never repeated a presentation, and that only one of the presenters spoke twice –but this was only because he liked the experience so much that he asked us to be allowed to do so.

Our colleagues talk about research, about new and exciting developments in the mathematical sciences, and about contemporary applications of mathematics. The mathematics talks are followed by a problem session, during which students work on problems and activities related to the concepts introduced in the preceding talks. Problem sessions are led either by the presenters themselves, or sometimes by graduate students. The meeting ends with a talk given by a faculty member from another scientific discipline.

Each talk starts with an introduction of the presenter by a student participant. Students volunteer for this activity. They are asked to meet in person with the faculty member, and to get information about the presenter's career and research interests. This information often includes facts about the influence that the presenter's high school teachers and university instructors had in the presenter's choice of the scientific field. The organizers provide a list of possible interview questions, but the interviewers are encouraged to conduct the research about the presenter on their own and to ask questions they find fit. The student's introduction of the speaker is an excellent icebreaker and sets a positive tone for the rest of the meeting.

During the refreshment breaks, and after the event, the students, their teachers and parents have an opportunity to talk to the faculty members and to the graduate students helping with the events. They can ask questions about the talks they have just heard, about mathematics in general, about careers in mathematics and sciences, and about the life at the university.

An interesting fact is that parents often join their children in attending *A Taste of Pi* events. Sometimes it is difficult to say which generation enjoys the talks and activities more!

A Taste of Pi meetings present a challenge for all participants. For presenters, the challenge is to explain their research interests, problems they and their research groups are working on, and their applications, to a group of very young smart people[1]. The exposure to mathematics topics that are often very far from high school mathematics is a challenge itself for the student participants. Through the engaging presentation, students' questions, and prepared activities, the topic of the talk unfolds. An important quality of the *A Taste of Pi* talks is lightness, notwithstanding the highbrow pieces. It is always interesting to witness how the magic of mathematics brings the two sides together.

The program also provides a valuable experience to graduate students who help with the problem sessions. They learn to prepare their presentations and to communicate challenging problems to students. On the other hand, graduate students, young people themselves, are great role models and inspiration for high school students attending the program.

For the authors of this note, the most exciting moments of each meeting are when students surround the presenter during the break or after the presentation. For many students, that might be the first time that they talk to a university professor. These moments of direct conversation give an opportunity to students to better understand the forces that make a mathematician, a highly trained and intelligent professional, to spend days (years?) thinking about a problem.

By bringing talented high school students to a university campus and giving them a chance to listen and talk to an actual scientist or a graduate student, the organizers of the series aim to achieve at least three goals. First, an immediate benefit is in making the young audience aware that their own work, talent, and ambition are recognized, respected, and supported by others. Secondly it is possible that some of the participants will be inspired by the talks to choose mathematics or a related science as their career opens[2]. Thirdly, the students get an opportunity to make direct contacts with the people from the university community and vice versa.

The first presentation in the series, titled "A VERY LARGE piece of Pi" was given on March 13, 2004 by Dr. Peter Borwein from the Department of Mathematics, SFU, who is also the founder and the director of IRMACS.

From March, 2004 until December, 2006, an NSERC PromoScience grant, managed through the Faculty of Science, SFU, was the major funding source for the series. From the very beginning, the program was financially and otherwise supported by the Department of Mathematics and the Faculty of Science. Since the fall of 2005, the series has been held in the IRMACS Centre. Currently, the Faculty of Science, the IRMACS Centre, and PIMS finance the series.

The current annual budget for the series is $3000. This includes all promotional material (creating and printing posters and certificates of participation, making T-shirts, managing the website), honoraria for graduate students, two nutrition breaks per meeting, presenters' expenses, bookings of computing labs, and technical and clerical support. Some funds are offered to high school students who incur substantial travel expenses to attend the sessions. For example, we assisted three students from Powell River, BC, with their travel expenses.

The list of all past presenters appears on the program's webpage, www.math.sfu.ca/atasteofpi/.

The website also contains general information about the series, listing of upcoming and past presentations, the names and contact information for the organizers, photographs from previous sessions, and a few useful links. The website was created by Ms. Ivana Filipovic of the Learning Instructional Development Centre (LIDC) at SFU. Following suggestions of the organizers, Ms. Filipovic created the series logo, the general format of posters that announce *A Taste of Pi* meetings, and an *A taste of Pi* T-shirt. The logo and posters give a visual identity to the program. The posters are sent to high schools and various SFU departments as promotional material. All participants get a T-shirt as a memento of their participation in the series.

The organizers are particularly thankful to several teachers who regularly accompany their students to the meetings. Their support and suggestions have been of a great help in improving the series. It seems that, after nine sessions, *a Taste of Pi* community among SFU faculty members and high school teachers has emerged. We support this claim by the fact that students from almost forty BC high schools have participated in the program and that thirty-seven faculty members have given talks.

We end this note with a quote from Mr. Brian Taylor, a mathematics teacher at Little Flower Academy in Vancouver: "I started taking students to the Taste of Pi lectures in the fall of 2005. The lectures are a wonderful opportunity for students to get an appreciation for the breadth of the field of mathematics. They have enjoyed lectures on mathematical topics as varied as knot theory, graph theory, complex numbers, n−dimensional polyhedra, and applied mathematics. The researchers do an excellent job of presenting very difficult topics in a way that is engaging

and accessible, and they really go out of their way to come up with activities that the students can do. The addition of a second shorter lecture by a researcher from a field other than mathematics has also been very successful. The students have enjoyed lectures on everything from volcanoes to cosmology. My students are enrolled in many extra-curricular activities and often choose to miss one or two regularly scheduled sessions of their own so that they can attend the Taste of Pi lectures. I think this speaks to the quality of the lectures and the level of satisfaction on the student's part. I have thoroughly enjoyed the lectures myself, and it has given me much more 'ammunition' to convince good students to pursue mathematics-related fields at the post-secondary level."

Footnotes

1. In Einsteins' word: You do not really understand something unless you can explain it to your grandmother.

2. One of the *A Taste of Pi* presenters recently has forwarded us a message from a former participant in the series, currently majoring in mathematics at the University of Toronto. The student wrote, "Back two years ago, I attended the *A Taste of Pi* lectures at SFU, and you delivered a lecture on numerical PDE's. That lecture was one of the most interesting I've ever attended!" The message continues by asking for an advice which undergraduate mathematics courses would be necessary to get into the specific field.

CALL FOR NOMINATIONS / APPEL DE MISES EN CANDIDATURE

Prix Adrien-Pouliot Award   2009

Nous sollicitons la candidature de personnes ou de groupe de personnes ayant contribué d'une façon importante et soutenue à des activités mathématiques éducatives au Canada. Le terme « contributions » s'emploie ici au sens large; les candidats pourront être associés à une activité de sensibilisation, un nouveau programme adapté au milieu scolaire ou à l'industrie, des activités promotionnelles de vulgarisation des mathématiques, des initiatives, spéciales, des conférences ou des concours à l'intention des étudiants, etc.

Les candidatures doivent nous être transmises via le « Formulaire de mise en candidature » disponible au site Web de la SMC : www.smc.math.ca/Prix/info/ap. Pour garantir l'uniformité du processus de sélection, veuillez suivre les instructions à la lettre. Toute documentation excédant les limites prescrites ne sera pas considérée par le comité de sélection.

Il est possible de renouveler une mise en candidature présentée l'an dernier, pourvu que l'on en manifeste le désir avant la date limite. Dans ce cas, le présentateur n'a qu'à soumettre des documents de mise à jour puisque le dossier original a été conservé. Les mises en candidature doivent parvenir au bureau de la SMC avant le **30 avril 2009**. Veuillez faire parvenir vos mises en candidature en six exemplaires à l'adresse ci-dessous :

Nominations of individuals or teams of individuals who have made significant and sustained contributions to mathematics education in Canada are solicited. Such contributions are to be interpreted in the broadest possible sense and might include: community outreach programmes, the development of a new program in either an academic or industrial setting, publicizing mathematics so as to make mathematics accessible to the general public, developing mathematics displays, establishing and supporting mathematics conferences and competitions for students, etc.

Nominations must be submitted using the Nomination Form available from the CMS Web site at: www.cms.math.ca/Prizes/info/ap. To assure uniformity in the selection process, please follow the instructions precisely. Documentation exceeding the prescribed limits will not be considered by the Selection Committee.

Individuals who made a nomination last year can renew this nomination by simply indicating their wish to do so by the deadline date. In this case, only updating materials need be provided as the original has been retained. Nominations must be received by the CMS Office no later **April 30, 2009**. Please send six copies of each nomination to the address given below.

The Adrien Pouliot Award / Le Prix Adrien-Pouliot
Canadian Mathematical Society / Société mathématique du Canada
1785 Alta Vista Drive, Suite 105
Ottawa, ON K1G 3Y6 Canada

The 2009 Adrien-Pouliot Award will be presented at the CMS Winter Meeting 2009 in Windsor, ON, December 5 to 7.
Le prix Adrien-Pouliot sera présenté à la Réunion d'hiver 2009 de la SMC à Windsor (Ontario), du 5 au 7 décembre.