

## Mise à jour du comité des étudiants de la SMC

Ce dernier Juin la comité des élèves de la Société Mathématiques du Canada (Stude) a subit un changement de membres. Comme toujours les membres de la Stude sont énergétiques et actifs. C'est constamment un plaisir de travailler avec un bon groupe comme celui-ci.

La Stude consiste de 12 membres : deux doyens – Susan Cooper (Université Queens) et Robert Juricevic (Université de Waterloo) ; un faculté – conseiller, Robert Woodrow (Université de Calgary) ; Le directeur exécutif de la Société Mathématiques du Canada (SMC), Graham Wright (Université d'Ottawa) ; et sept étudiants membres. Ci-dessous sont les noms et les différents projets de ces sept membres.

\* Joy Abramson (Université de Toronto) était le président de la comite organisationnelle du Congrès Canadiens des Etudiants en Mathématique (CCEM) à l'université de York. Le CCEM était un grand succès. Bon Travail Joy ! Maintenant Joy joue le rôle de lien entre la Stude et le comité organisationnel de la CCEM. En particulier Joy travaille sur la mise à jour du manuel opérationnel de la CCEM qui sera utilisé comme un guide pour la planification des prochains congrès.

\* Adriana Dawes (Université de la Colombie Britannique) travaille sur le projet des conférences régionales. Ce projet à pour but de supporter quelques activités pour étudiants dans tout le Canada. Si vous planifiez une activité et avez besoin de fonds, envoyez un email à [student-funding@cms.math.ca](mailto:student-funding@cms.math.ca).

\* Duana Kipling (Université de Saskatchewan) est devenue membre ce Juillet dernier. Duana travaille sur la mise à jour le manuel opérationnel de la Stude. Ce manuel décrit les projets courants de la Stude pour permettre une transition facile dans le cas de changement de membres. Nous sommes certains que Duana fera un très bon projet.

\* Youness Lamazouri (Université de Montréal) travaille avec Adriana sur le projet des

conférences régionales. En plus, Youness a développé une page de problèmes sur le site de la Stude. Sur cette page vous trouverez des problèmes du niveau de ceux des examens Putnam que vous pouvez résoudre comme un défi. Bon Travail Youness !

\* Antoine Khalil (Université Concordia) est l'éditeur de ce bulletin ! C'est la troisième issue d'Antoine. Nous remercions Antoine et le félicitons pour son bon travail ! Si vous avez des commentaires n'hésitez pas à contacter Antoine directement par email à [student-editor@cms.math.ca](mailto:student-editor@cms.math.ca).

\* Gillman Payette (Université de Dalhousie) est le président du comité organisationnel du CCEM à L'université de Dalhousie cet été. Comme les années précédentes le comité est sur que la CCEM cette année sera un grand succès. Vous pouvez contacter Gillman en lui envoyant un email à [cumc@cums.math.ca](mailto:cumc@cums.math.ca).

\* Boris Reitman (Université de Simon Fraser) est notre webmestre. Boris est occupé par la mise à jour de la page Web de la Stude. Il aide aussi dans la mise à jour de la page Web du CCEM. Sa contribution est un grand capital pour le future ! Visitez notre page Web <http://www.cms.math.ca/Students>. Pour tout commentaire contactez Boris à [student-webmaster@cms.math.ca](mailto:student-webmaster@cms.math.ca)

Nous voulons aussi remercier tous les anciens membres de la comité, en particulier Renato Dedic et Dan Piche. Renato a crée notre premier poster promotionnel pour la Stude. Son travail est merveilleux ! Dan Piche est le fondateur de la Stude. Il a quitte le comité pour la première fois ce dernier Juin. Dan tu es une vraie inspiration ! Travailler avec vous deux était magnifique !

Si vous avez des commentaires sur nos activités ou des projets que vous pensez seront intéressants pour la Stude, SVP envoyez nous en email à [chair-studc@cms.math.ca](mailto:chair-studc@cms.math.ca)

Sincèrement,  
Susan Cooper et Robert Juricevic  
Co-doyen, Comité des étudiants SMC

(Traduction par l'éditeur)

## CMS Student Committee Report

This past June the CMS Student Committee (Stude) experienced a change of membership. As usual, Stude has energetic and active members. It is a pleasure to work with such a lovely group of people.

Stude currently consists of twelve people: two chairs - Susan Cooper (Queen's University) and Robert Juricevic (University of Waterloo); one faculty advisor - Robert Woodrow (University of Calgary); the CMS Executive Director - Graham Wright (University of Ottawa); and seven student members. The following people are the seven members.

\* Joy Abramson (University of Toronto) was the president of the organizing committee for CUMC this past June held at York University. CUMC 2003 was a huge success. Great job Joy! Joy is now working as a liaison between Stude and the CUMC organizing committee. In particular, Joy is updating the CUMC Operations Manual which is used as a guide in planning CUMC. This contribution will be a great asset to CUMC organizers.

\* Adriana Dawes (University of British Columbia) is working on the regional conferences project. The goal of this project is to support a number of student activities across the country. If you are planning an activity and need funding, send an email to [student-funding@cms.math.ca](mailto:student-funding@cms.math.ca).

\* Duana Kipling (University of Saskatchewan) joined Stude this past July. Duana is working on updating the Stude Operations Manual. This manual describes the ongoing projects of Stude so to allow easy transitions when the committee experiences change of members. We are sure that Duana will do a great job on this project.

\* Youness Lamzouri (University de Montreal) is working with Adriana on the regional conferences project. In addition, Youness has created a Problems Page on our Stude website. On this page you can find Putnam level problems to challenge yourself with. Great job Youness!

\* Antoine Khalil (Concordia University) is the editor of this newsletter! This is Antoine's third issue. We wish to take this moment to thank Antoine and congratulate him on such a wonderful job!

If you have any comments for Antoine please email him directly at [student-editor@cms.math.ca](mailto:student-editor@cms.math.ca).

\* Gillman Payette (Dalhousie University) is the resident of the organizing committee for CUMC (to be held at Dalhousie University) this summer. As in past years, we are sure that CUMC this year will be another great success! You can contact Gillman by sending an email to [cumc@cums.math.ca](mailto:cumc@cums.math.ca)

\* Boris Reitman (Simon Fraser University) is our Webmaster. Boris has been busy updating the Stude Web page as well as helping with the CUMC website. His contribution will be a great asset in future years! Check out our Web page <http://www.cms.math.ca/Students>

If you have any comments, contact Boris at [student-webmaster@cms.math.ca](mailto:student-webmaster@cms.math.ca).

We would like to take this moment to thank our past committee members, in particular Renato Dedic and Dan Piche. Renato created our first Stude promotional poster and did a wonderful job! Dan Piche was the founder of Stude and has left the committee for the first time in June. Dan, you are a true inspiration! It was wonderful working with both of you.

If you have any feedback on our activities, or if you have any projects that you feel would be interest to Stude, please send us an email at [chair-studc@cms.math.ca](mailto:chair-studc@cms.math.ca)

Sincerely,

Susan Cooper and Robert Juricevic  
Co-Chairs, CMS Student Committee

Let  $n = p_1^{\alpha_1} \cdots p_n^{\alpha_n}$  be an integer greater than or equal to 1, where  $p_i, i = 1, \dots, n$  are distinct prime numbers and  $\alpha_i$  is the power of  $p_i$  in  $n$ . The radical of  $n$  is defined as  $\text{rad}(n) = p_1 \cdots p_n$ . Suppose that  $a$  and  $b$  are odd positive integers such that for every natural number  $k$

$$\text{rad}(a^k - 2) = \text{rad}(b^k - 2)$$

Assuming the *ABC Conjecture* (see notes in March 2003 newsletter), prove that

$$a = b.$$

This problem is due to H. Kisilevsky, Concordia University, Montreal.

## Solution

(from J. Esmonde, M. Ram Murty, *Problems in Algebraic Number Theory*)

Suppose  $\text{WLOG}$  that  $a < b$ . Hence  $\log a > \log b$  so we can choose  $\varepsilon > 0$  so that  $\log b > (1 + \varepsilon) \log a$ .

Now apply the *ABC* conjecture to the equation  $(b^n - 2) + 2 = b^n$ . Then

$$\begin{aligned} b^n &\leq \kappa(\varepsilon) (2b \text{rad}(b^n - 2))^{1+\varepsilon} \\ &\leq \kappa(\varepsilon) (2b \text{rad}(a^n - 2))^{1+\varepsilon} \\ &\leq \kappa(\varepsilon) (2ba^n)^{1+\varepsilon}. \end{aligned}$$

Taking  $n$ th roots and letting  $n \rightarrow \infty$  gives  $\log b \leq (1 + \varepsilon) \log a$ , which is a contradiction.

## New Problems:

1. (Suggested by R. Juricevic)  
Prove that any group of order 77 is cyclic.

2. Find the flaw in the following proof by induction:

**Claim:** All horses have the same color.

Case  $n = 1$ : One horse clearly has the same color as itself.

Suppose the claim is true for all  $k < n$ . Consider a collection of  $n$  horses.

Take one horse out, since  $n - 1$  horses are left they must have the same color. Take a different horse out of the group and put back the original horse you took out. You again have a collection of  $n - 1$  horses so they must have the same color. Therefore all  $n$  horses are the same color and the claim is proved!

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## CMS Winter Meeting

The CMS winter meeting is just around the corner! This meeting will be held at the Simon Fraser University in Vancouver from the 6<sup>th</sup> to the 8<sup>th</sup> of December 2003.

Here's your chance to meet famous mathematicians and learn more about what they do. This is also your chance to learn more about the Student Committee! Maybe even get involved!

Check out:

<http://www.cms.math.ca/Events/winter03>

Need money to get there? Email

[gradtravel-w03@cms.math.ca](mailto:gradtravel-w03@cms.math.ca)

The deadline for requests is November 1<sup>st</sup> 2003. (You could also ask your math department for support!)

## CMS Bits and Bites

\* **Two Canadian mathematicians honored for outstanding achievements.** Dr. Andy Liu won the CMS's 2003 Adrien Pouliot Award for mathematical education. Dr. James Arthur will be awarded the G. de B. Robinson Prize for 2003.

The awards will be presented at the banquet of the CMS winter meeting on December 7<sup>th</sup> 2003 at the Pan Pacific Hotel. Congratulations!

\* **The CMS Distinguished Service Award 2003** was awarded to **Dr. William Moser**. The award was created in 1995 to recognize individuals who have made significant contributions to the Canadian mathematical community in general and the CMS in particular. Congratulations!

\* **Canada won 2 gold and 3 bronze medals at the 2003 International mathematical Olympiad in Tokyo, Japan.** The Olympiad was held from the 11<sup>th</sup> to the 18<sup>th</sup> of July 2003. The Canadian students competed against students from 81 other countries. The Canadian team finished in the top 13.

For more details about the News Cuts and for more news please check

<http://www.cms.math.ca/MediaReleases>

## CUMC A Great Success!

This year's was the 10<sup>th</sup> anniversary of the Annual Canadian Undergraduate Mathematics Conference (CUMC). The event took place at York University – Toronto from May the 28<sup>th</sup> to June 1<sup>st</sup> 2003.

The conference was a great success! Beside the many interesting talks, the participants had the chance to explore some of Toronto's attractions. Great job by the organizing committee! We are looking forward to the 11<sup>th</sup> CUMC next year at Dalhousie!

For more information on the CUMC please check <http://www.cumc.math.ca>.