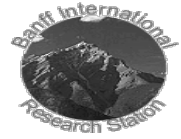# Number Theorists Weekend
November 18 – 20, 2004

MEALS

Breakfast (Continental): 7:00 – 9:00 am, 2nd floor lounge, Corbett Hall, Friday & Saturday *(included in workshop)*

Lunch (Buffet): 11:30 am – 1:30 pm, Donald Cameron Hall *(Cost: $12.50 + tax)*

Dinner (Buffet): 5:30 – 7:30 pm, Donald Cameron Hall *(Cost: $23 + tax)*

Coffee Breaks: As per daily schedule, 2nd floor lounge, Corbett Hall *(included in workshop)*

For other lighter meal options at The Banff Centre, there are two other options: Gooseberry's Deli, located in the Sally Borden Building, and The Kiln Cafe, located beside Donald Cameron Hall. There are also plenty of restaurants and cafes in the town of Banff, a 10-15 minute walk from Corbett Hall.

MEETING ROOMS

All lectures will be held in Max Bell 159 (Max Bell Building accessible by bridge on 2nd floor of Corbett Hall). Hours: 6 am – 12 midnight. LCD projector, overhead projectors and blackboards are available for presentations. *Please note that the meeting space designated for BIRS is the lower level of Max Bell, Rooms 155-159. Please respect that all other space has been contracted to other Banff Centre guests, including any Food and Beverage in those areas.*

SCHEDULE

Thursday

16:00   Check-in begins (Front Desk – Professional Development Centre - open 24 hours)
Lecture rooms available after 16:00.

17:30   Gather in 2nd floor lounge.

18:00   Procession to town for dinner: Magpie & Stump.

20:30   Informal gathering in 2nd floor lounge, Corbett Hall (if desired)
Beverages and small assortment of snacks available in the lounge on a cash honour-system basis.

Friday

7:00-9:00   Breakfast, 2nd floor lounge, Corbett Hall

9:30   Richard Guy, Another look at some old chestnuts.

Abstract: Can we find out more about the distribution of primes by looking for `prime deserts' rather than just large gaps?

There are several problems concerning the sum of divisors function which may be more tractable than that of odd perfect numbers. Can we find out more about aliquot sequences?

Now that our knowledge of elliptic curves is expanding, we may be able to answer some unanswered questions about specific Diophantine equations.

10:30-11:00 Coffee Break, 2nd floor lounge, Corbett Hall

11:00   Richard Pinch, Pseudoprime and Carmichael numbers

Abstract: The talk will introduce various notions of psuedoprime, including Carmichael numbers, and discuss recent results both theoretical and computational, on their distribution. I will also mention an application to Lehmer's Totient Problem.

12:00-14:00 Lunch

14:00-15:00 Informal Discussion

15:00-15:30 Coffee Break, 2nd floor lounge, Corbett Hall.

15:30-16:30 More Informal Discussion

Saturday

7:00-9:00   Breakfast, 2nd floor lounge, Corbett Hall

9:30   Greg Martin, Lots of digits, lots of decimal places

Abstract: This will be a very accessible talk about two unrelated and elementary problems. The first problem is to find a number n satisfying the inequality $phi(30n+1) < phi(30n)$, where phi is the usual Euler totient function. The second problem is to construct a number whose decimal-type expansion to any base is "abnormal", in the sense that the various base-b digits are not equally frequent in the limit. This should be the best talk of the year, among those that display the first twenty-three-billion-odd decimal places of a real number.

10:30-11:00 Coffee break, 2nd floor lounge, Corbett Hall

11:00   Lassina Dembele, Computing Hilbert modular forms

Abstract: I will present a new algorithm that can be used to compute Hilbert modular forms very efficiently. This is an important step as it allows numerical experimentation on such forms as was never done before. I will illustrate the presentation with some numerical examples. I will also explain how one can determine some of the geometric objects corresponding to some of the forms.

Checkout by 12 noon.

14:30   Michael Bennett, TBA

15:20   Jordan Ellenberg, Counting field extensions

Abstract: (joint work with A. Venkatesh) We will discuss recent work giving upper bounds on the number of extensions of fixed degree and bounded discriminant of a number field; we will also present some work on the analogous problem for function fields, and describe some refined conjectures in the number field case arising from function-field analogies.

** 2-day workshops are welcome to use the BIRS facilities (2nd Floor Lounge, Max Bell Meeting Rooms, Reading Room) until 16:00 on Saturday, although participants are still required to checkout of the guest rooms by 12 noon. There is no coffee break on Saturday afternoon. **