# COLLOQUIUM SPEAKER SERIES
## Mathematics and Computer Sciences

## Tuesday May 5
## 11:00-11:50, room D634


## Jonathan Backer

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PhD, UBC, Vancouver, 2009


**RESEARCH INTERESTS:**
Computational geometry,
bounded curvature motion planning,
problems of a combinatorial nature.

Variants of the maximum empty rectangle problem.


**Abstract**
The maximum empty rectangle (MER) problem is as follows: Given a set of points X in the plane and an axis-aligned rectangle E, find the largest-area axis-aligned rectangle R such that R is contained in E and R contains no point of X. In this talk, I will discuss new unpublished results on variants of this problem. In particular, I talk about higher dimensions, the restriction to cubes, and bichromatic objectives (instead of maximising area, try to contain as many blue points but no red points). These new results are nice because they use standard geometric techniques (sweep-planes) and rely on (relatively) easy-to-visualise geometric observations.


**STUDENTS ARE ENCOURAGED TO ATTEND !**