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Mathematics and Statistics

**Seminars & Colloquium**

**August 23 - 27**

**Colloquium: There is no colloquium this week.**

**Monday – August 23**

**Tuesday – August 24**

**Wednesday – August 25**

**Thursday – August 26**

**Friday – August 27**

   Algebra; 3:00-4:00 p.m., MATH 016

Speaker: Brian Miller “Groebner Bases in Symbolic Integration"

Abstract.  The problem of integration in finite terms is to decide in a finite number of steps whether a given integrand has an elementary integral, and if it exists, compute it. Although there is a complete algorithmic solution to the problem, methods for computing the integral are still being studied. In fact, all of the current computer algebra systems contain only a partial implementation of the so-called Risch algorithm. In recent work, Czichowski has shown that the logarithmic part of a rational function in Q(x) may be computed by a Groebner Base. We give a brief overview of the problem of integration in finite terms, methods in symbolic integration, and show that Czichowski's result can be extended to arbitrary monomials over an arbitrary differential field.