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# Colloquium

**Co-hosted by Women in  
Mathematics at UCR**

**Shelly Harvey**

**(Rice University)**

**“ Filtrations of the Knot  
Concordance Group”**

**Wednesday December 3, 2008**

**4:10-5:00pm**

**Surge 284**

*Tea Time is at 3:40*

**Abstract:** The sets of knots in  $S^3$  modulo the equivalence relation concordance forms an infinitely generated abelian group  $C$ , called the knot concordance group. Not much is known about this group. We will review the knot concordance group and its Cochran-Orr-Teichner  $(n)$ -solvable filtration. Using Cheeger-Gromov  $L^2$  invariants, we showed that each successive quotient of the  $(n)$ -solvable filtration has infinite rank as an abelian group. We show, in a sense, that the successive quotients of the  $(n)$ -solvable filtration can be decomposed into pieces corresponding to finite sequences of prime polynomials. This talk will be accessible to graduate students. This is joint work with Tim Cochran (Rice University) and Constance Leidy (Wesleyan University).