1037-57-353 **Shelly Harvey*** (shelly@rice.edu), Dept of Mathematics, Rice University, Houston, TX 77005, and **Tim Cochran** and **Constance Leidy**. *The (n)-Solvable Filtration of the Knot Concordance Group.*

In 1997, T. Cochran, K. Orr, and P. Teichner defined a filtration $\mathcal{F}_n$ of the classical knot concordance group $\mathcal{C}$. The filtration is important because of its strong connection to the classification of topological 4-manifolds. Here we introduce new techniques for studying $\mathcal{C}$ and use them to prove that, for each natural number n, the abelian group $\mathcal{F}_n/\mathcal{F}_{n.5}$ has infinite rank. We establish the same result for the corresponding filtration of the smooth concordance group. We also resolve a long-standing question as to whether certain natural families of knots, first considered by Casson-Gordon and Gilmer, contain slice knots. (Received February 05, 2008)