1037-57-236 **Peter D Horn*** (phorn@rice.edu), Mathematics Department – MS 136, Rice University, P.O. Box 1892, Houston, TX 77251. *Higher-order genera of knots.* Preliminary report.

In 2003, Cochran, Orr and Teichner introduced the grope filtration of the knot concordance group

$$0 \subset \cdots \subset \mathcal{G}_{n+2} \subset \cdots \subset \mathcal{G}_3 \subset \mathcal{G}_2 \subset \mathcal{C}$$

Not much was known about the grope filtration until Cochran and Teichner recently proved that $\mathcal{G}_{n+2}/\mathcal{G}_{n+3}$ contains elements of infinite order. The presenter subsequently proved $\mathcal{G}_{n+2}/\mathcal{G}_{n+3}$ has infinite rank for all n.

In this talk, we discuss new concordance invariants, the *higher-order genera*, and prove that at every level ($n+2$, say) of the grope filtration, there are knots of arbitrarily high n-th order genus. (Received February 04, 2008)