CHRISTOPHER DAVIS, University of Wiscoinsin at Eau Claire
A genus one algebraically slice knot is 1-solvable.

Joint with Jung Hwan Park, Carolyn Otto and Taylor Martin

Cochran, Orr and Teichner developed a filtration of the knot concordance group indexed by half integers called the solvable filtration. In particular $\mathcal{F}_{0.5}$ is the set of all algebraically slice knots. It has been shown that $\mathcal{F}_n/\mathcal{F}_{n.5}$ is a very large group for $n \geq 0$. The proof of this fact relies on the study of a link associated to an algebraically slice knot called a derivative.

Nothing is known about the other half of the filtration, $\mathcal{F}_{n.5}/\mathcal{F}_{n+1}$. In this project we present a technique which replaces a genus 1 algebraically slice knot by a concordant knot but replaces a derivative with a 0-solvable knot. We will also discuss the application of this technique to higher genus knots, proving that many algebraically slice knots are 1-solvable.