1067-30-2386   **Hayley M Miles-Leighton*** (`hmilesleighton@gmail.com`). *The Links Between Smale's Mean Value Conjecture and Convergence.* Preliminary report.

Smale's Mean Value Conjecture (SMVC) states if f(z) is a complex valued polynomial and c is one of its critical points, then $|f(c)/c| \leq 1$. There has been some progress towards proving this conjecture, particularly in the past 10 years, but most have been better bounds on the original theorem that was proved by Steve Smale (the original theorem replaced 1 with 4). In this talk, I plan to introduce SMVC for the cubic polynomial case and explore the links between where these critical points satisfy SMVC and where they converge to the origin. To prove these links in full, I will explain a specific case of Beardon's Petal Theorem which will introduce the concepts of conjugacy as well as mappings by $1/z$ in the complex plane. (Received September 23, 2010)