1003-53-1451   **Daniel Richard Cole*** (`daniel.r.cole@dartmouth.edu`), 6188 Bradley Hall, Dartmouth College, Hanover, NH 03755. *Minimal Surfaces in Three Dimenisional Sub-Riemannian Spaces.* Preliminary report.

We study minimal surfaces and the Plateau Problem in three dimensional sub-Riemannian spaces. The Heisenberg group and the Martinet space are the quintessential examples of the types of spaces we are studying. We develop a method of finding obstructions to smooth solutions to the Plateau Problem in these spaces. We also find examples of curves for which the solutions to the Plateau Problem are merely continuous, even though the curves have smooth spanning surfaces which satisfy the minimal surface equation. We show how the existence of these particular examples is partially dependent on the step size of the singular points of the sub-Riemannian space. (Received October 05, 2004)