1112-51-489 **Alex D Austin*** (alexander.austin@gmail.com). *Logarithmic Potentials and Quasiconformal Flows on the Heisenberg Group.* Preliminary report.

The Heisenberg group, $\mathbb{H}$, arises in several geometric settings, with descriptions suited to each. In this talk it is $\mathbb{R}^3$, with group product $uq = (u_1 + q_1, u_2 + q_2, u_3 + q_3 + 2(q_1u_2 - u_1q_2))$, homogeneous norm $\|(u_1, u_2, u_3)\| = ((u_1^2 + u_2^2)^2 + u_3^2)^{1/4}$, and metric $d(u, q) = \|q^{-1}u\|$.

We display a family of metrics on $\mathbb{R}^3$, which can be thought of as the Heisenberg metric d weighted with (the exponential of) a logarithmic potential. Given one of these metrics, we show it to be bilipschitz equivalent to d by constructing a quasiconformal mapping of $\mathbb{H}$ with Jacobian comparable to the weighting.

Construction of the quasiconformal mapping, following analogous work of Bonk, Heinonen, and Saksman in the Euclidean setting, uses quasiconformal flows. Along the way we extend the quasiconformal flow theory of Korányi and Reimann, establish a new variational equation, confront the limitations of conformal mappings on $\mathbb{H}$, and discover links to the radial stretch maps of Balogh, Fässler and Platis. (Received August 10, 2015)