March 29: Ivan Losev (MIT), "Quantization of nilpotent orbits vs. W-algebras."

Let G be a semisimple algebraic group over $\mathbb{C}$, $\mathfrak{g}$ its Lie algebra, and $\mathbb{O}$ a nilpotent orbit in $\mathfrak{g}$. The goal of this talk is to relate quantizations of $\mathbb{O}$ (and of its G-equivariant coverings) to one-dimensional modules over the W-algebra constructed from $\mathbb{O}$. By a quantization we mean a deformation quantization in the algebro-geometric setting equipped with some additional structures. The structures of interest are a G-action, a $\mathbb{C}^\times$-action and a quantum comoment map. The relationship is that, roughly, quantizations are in a natural (tautological in some sense) one-to-one correspondence with one-dimensional modules over the W-algebra.

To the speaker's huge disappointment this result is not new, it was proved by Moeglin in the late 80s in a different but essentially equivalent form.

No prior knowledge of W-algebras is required.