1119-14-172 **Martha Precup*** (mprecup@math.northwestern.edu) and **Edward Richmond** (edward.richmond@okstate.edu). *Generalized Kostant polynomials.* Preliminary report.

Let $\mathfrak{g}$ be a semisimple Lie algebra and W denote the corresponding Weyl group. The Kostant polynomial K_w corresponding to $w \in W$ is a degree $\ell(w)$ polynomial that satisfies certain vanishing properties on the orbit $W \cdot S_r$ of a regular semisimple element of $\mathfrak{g}$. In this talk, we define polynomials that satisfy analogous vanishing conditions on the W-orbit of an arbitrary semisimple element S and use these to analyze the coordinate ring $\mathbb{C}[W \cdot S]$. We are motivated to do so by a result of Jim Carrell proving that in many cases $Gr\,\mathbb{C}[W \cdot S]$ is isomorphic to the cohomology ring of the Springer fiber $\mathcal{B}^N$ where N is a regular nilpotent element of the Levi subalgebra $\mathfrak{z}_{\mathfrak{g}}(S)$ of $\mathfrak{g}$. We give an inductive formula for the Poincaré polynomial of $\mathcal{B}^N$ which holds in these cases. (Received February 15, 2016)