Eamon Quinlan-Gallego* (equinlan@umich.edu). Bernstein-Sato theory for arbitrary ideals in prime characteristic.

The Bernstein-Sato polynomial of an ideal $a \subseteq \mathbb{C}[x_1, \ldots, x_n]$ is an invariant that originated in complex analysis and with now strong applications in birational geometry and singularity theory over $\mathbb{C}$. It measures, for example, the log-canonical threshold of $a$ as well as other jumping numbers of the multiplier ideal of $a$.

Since multiplier ideals and the log-canonical threshold admit good analogues in prime characteristic (namely, test ideals and the $F$-pure threshold) one can hope to develop a theory of Bernstein-Sato polynomials in this setting. This hope was realized by Mustaţă and Bitoun for principal ideals $a = (f)$ and recently generalized by myself to arbitrary ideals $a$.

In this talk we will survey this new Bernstein-Sato theory in positive characteristic and discuss a comparison result for monomial ideals. (Received July 10, 2019)