Benjamin J Drabkin* (benjamin.drabkin@huskers.unl.edu), 1535 F Street, Apt 10, Lincoln, NE 68508. The containment problem for symbolic powers and hyperplane arrangements.

Given an ideal $I$ in a commutative Noetherian ring $R$, the $m$-th symbolic power of $I$ is defined to be $I^{(m)} = \bigcap_{p \in \text{Ass}(I)} I_p^m \cap R$. It is well known, due to the works of Ein-Lazarsfeld-Smith, Hochster-Huneke, and Ma-Schwede, that every ideal $I$ of codimension $e$ in a regular ring satisfies the containment $I^{(er)} \subseteq I^r$ for all $r \geq 1$. In many cases, this containment can be improved upon, however, in recent years a number of ideals have been found for which the containment is tight.

Ideals exhibiting tight containments have been the object of a great deal of study over the last few years, and there has been a concerted effort to find new containment-tight ideals. All known ideals exhibiting tight containments arise from certain hyperplane arrangements. This talk will demonstrate a technique by which containment-tight ideals arising from the singular locus of a hyperplane arrangement can be used to find containment-tight ideals in higher-dimensional hyperplane arrangements. This has applications to providing novel examples of containment-tight ideals. (Received September 23, 2018)