GREG SMITH, Queen's University
Better Locally-Free Resolutions

Syzygies capture subtle geometric properties of a subvariety in projective space. However, when the ambient space is a product of projective spaces or a general smooth toric variety, minimal free resolutions over the Cox ring are too long and contain many geometrically superfluous summands. After illustrating this problem, we will construct some shorter free complexes that better encode the intrinsic geometry. This talk is based on joint work with Daniel Erman and Christine Berkesch Zamaere.