

College of Arts and Sciences
Department of Mathematics
University of South Carolina

Math Colloquium

Quotients of the Polynomial Algebra in Three Variables

Lars Christensen, Texas Tech University

Host: Andrew Kustin



Thursday
March
1st

4:30 PM
LeConte 412

Let K be a field, for example that of complex numbers, and let R be a quotient of the polynomial algebra $Q = K[x,y,z]$. The minimal free resolution of R as a module over Q is a sequence of linear maps between free Q -modules. One may think of such free resolutions as the result of a linearization process that unwinds the structure of R in a series of maps. This point of view, which goes back to Hilbert, already yields a wealth of information about R , but there is more to the picture: The resolution carries a multiplicative structure; it is itself a ring! For algebraists this is *Gefundenes Fressen*, and in the talk I will discuss what kind of questions this structure has helped answer and what new questions it raises.