



THE UNIVERSITY
of NORTH CAROLINA
at CHAPEL HILL

Mathematics Colloquium

Thursday, September 26, 2024
3:30–4:30 p.m.
Phillips Hall 332

Interpolation for polynomials in two variables

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Abstract. Suppose you want a polynomial $f(x, y)$ to vanish at n specific points p_i in the plane. If the points are not general, this is difficult; but what if you have general points? (We'll mention what 'general' means in this setting.) If you only want the polynomial to vanish, this is elementary. Suppose you generalize to vanishing ***with multiplicity***, i.e., the polynomial and all derivatives up to m_i-1 must vanish (multiplicity m_i). This is quite a bit more difficult, and is open for more than 9 points! I'll discuss the various conjectures that have attracted attention, all of which are still open, and some recent progress. This is joint work with C. Ciliberto (Rome) and J. Roe' (Barcelona).