“Fitting a Smooth Function to Data”

Abstract: Given an arbitrary set \( E \) in \( \mathbb{R}^n \), and a function \( f: E \rightarrow \mathbb{R} \), how can we tell whether there exists \( F \) in \( C^m(\mathbb{R}^n) \) such that \( F = f \) (or \( F \) is very near \( f \)) on \( E \)? How small can we take the \( C^m \) norm of \( F \)? What can be said about the Taylor polynomial of \( F \) at a given point? Can we take \( F \) to depend linearly on \( f \)? If \( E \) is finite, can we compute an essentially optimal \( F \)? How many operations does it take? Some of the results are joint work with Bo'az Klartag.

Monday, December 5, 2005, 4:30pm
Location?

(ask if light refreshments will be served before or after in 284)