Hilbert's 13th Problem

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The 13th Problem from Hilbert's famous list asks: can every continuous function of three variables be written as a composition of continuous functions of two variables? Hilbert thought the answer should be negative - surely functions of three variables are 'more complex' than those of two, and composing functions only adds a limited amount of extra complexity.

In 1954 Vitushkin proved a result in the direction Hilbert expected: there are continuously differentiable functions of three variables which can not be written as a composition of continuously differentiable functions of two variables. But three years later Arnold and Kolmogorov gave a remarkable positive solution to Hilbert's 13th Problem - in fact every continuous function of any number of variables can be written as a composition of functions of just one variable plus addition.

In this talk the speaker will outline a proof of Vitushkin's theorem, and then discuss work of the speaker and Ziqin Feng around Hilbert's 13th Problem.

The lecture will take place in Thackeray 704 at 4:00pm.
Refreshments will start at 3:30pm.