Math and Computer Science
Colloquium
Presents:

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Speaking on:

Pythagoras, Fermat and Euler: a progression of Diophantine equations

When can a *k*-th power be written as a sum of other *k*-th powers? Thinking of the Pythagorean Theorem, several examples of squares that are equal to the sum of two other squares will likely come to your mind. For higher powers, however, Pierre de Fermat claimed that it is impossible to write a cube as a sum of two cubes or any power greater than the second as a sum of two others. (This is Fermat's Last Theorem.) While working on Fermat's Last Theorem, Euler conjectured that it is impossible to express a *k*-th power as a sum of fewer than *k* others, but suggested that it should be possible when you allow *k* or more summands. If the first part of his conjecture is true, Fermat's Last Theorem would be a special case. In this talk, I will discuss these problems. In particular, I will present both parts of Euler's conjecture, give some answers, and ask more questions.

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