Number Theory Colloquium

Explicit modular approaches to generalized Fermat equations

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Abstract: Let $a, b, c \geq 2$ be integers satisfying $1/a + 1/b + 1/c > 1$. Darmon and Granville proved that the generalized Fermat equation $x^a + y^b = z^c$ has only finitely many coprime integer solutions; conjecturally something stronger is true: for $a, b, c \geq 3$ there are no non-trivial solutions and for $(a, b, c) = (2, 3, n)$ with $n \geq 10$ the only solutions are the trivial solutions and $(\pm 3, -2, 1)$ (or $(\pm 3, -2, \pm 1)$ when n is even).
I'll explain how the modular method used to prove Fermat's last theorem adapts to solve generalized Fermat equations and use it to solve the equation $x2 + y3 = z^{10}$.

Monday, February 14, 2011, 4:00 pm
Mathematics and Science Center: W201

Refreshments at 3:30pm in the MSC Break Room

Mathematics and Computer Science
Emory University