Title: Beyond Fermat's Last Theorem

Abstract: What do we (number theorists) do with ourselves now that Fermat's last theorem (FLT) has fallen? I'll discuss lots of generalizations of FLT (and some underlying intuitions) -- for instance, for integers $a, b, c \geq 2$ satisfying $1/a + 1/b + 1/c < 1$, Darmon and Granville proved the single 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 $(-3, -2, 1)$ (or $(-3, -2, 1)$ when $n$ is even).

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