The Friedlander–Iwaniec Theorem There are infinitely many prime numbers of the form $m^2 + n^4$, for positive integers $m$ and $n$. Number $y$ of integers $\leq N$ represented by various polynomials: data up to $N = 10^4$ (solid lines) and asymptotics (dashed lines).

Friedlander and Iwaniec used sophisticated prime ‘sieving’ methods to give the first proof that a thin polynomial sequence could contain infinitely many primes, inspiring Heath-Brown’s proof that there are infinitely many primes which are sums of three cubes.
